BY ORDER OF THE COMMANDER
AIR EDUCATION AND TRAINING COMMAND

AIR FORCE INSTRUCTION 21-103

AIR EDUCATION AND TRAINING COMMAND
Supplement 1

30 NOVEMBER 2001

Maintenance

EQUIPMENT INVENTORY, STATUS, AND UTILIZATION REPORTING

COMPLIANCE WITH THIS PUBLICATION IS MANDATORY

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AFI 21-103, 20 July 1998, is supplemented as follows:

NOTES:

1. This supplement applies to all Air Education and Training Command (AETC) aircraft, trainer, and communications-electronics (C-E) maintenance activities. **Attachment 17 (Added)** through **Attachment 35 (Added)** pertain to this supplement only and provide information needed to use this supplement. Asterisks used in attachments make up a five-digit work unit code (WUC).
2. The reporting requirement in this supplement is exempt from licensing according to AFI 37-124, *The Information Collections and Reports Management Program; Controlling Internal, Public, and Interagency Air Force Information Collections,* paragraph 2.11.7.
3. Maintain and dispose of records created as a result of processes prescribed in this publication in accordance with AFMAN 37-139, *Records Disposition Schedule*.
4. Recommendations for change, improvement, or waivers to this instruction should be annotated on AETC Form 1236, **Request for Improving/Changing AETC Maintenance Regulations/ Instructions.** Requests must be approved by the appropriate group commander (or squadron commander, if not assigned to a group) before forwarding to HQ AETC/LGMMP, 555 E Street East, Randolph AFB TX 78150-4440, for action by HQ AETC/LGM.

SUMMARY OF REVISIONS

This revision incorporates interim change (IC) 2001-1 which adds **Attachment 35 (Added)**, T-6 Mission Essential Subsystem List (MESL), and **Attachment 36 (Added)**, T-38C Mission Essential Subsystem List (MESL). See the last attachment of this publication (IC 2001-1) for the complete IC. A (|) indicates revision from the previous edition.

2.5.1. Bullet 2. By message, provide HQ AETC/LGMA-AVDO and HQ AETC TRSS/IDO the name, grade, duty phone, and office symbol of the primary and alternate AVDO annually at the beginning of each fiscal year and as changes in personnel occur. Recommend that the senior maintenance scheduler or civilian equivalent be appointed as the wing's AVDO.

2.6.2. The AETC AVDO's address is HQ AETC/LGMA-AVDO, 555 E Street East, Randolph AFB TX 78150-4440.

2.10. See **Attachment 18 (Added)** for a list of commonly used possession purpose codes with their level of authorized use.

2.11.6. (Added) An aircraft assigned to another MAJCOM or AETC wing arrives or departs an AETC base for scheduled maintenance (for example, inspection or corrosion control). Use the station location code of the AETC base performing the maintenance and possession purpose identifier "BL."

2.11.7. (Added) The actual acceptance, operational use (utilization), or designation of responsibility for an aircraft changes. Aircraft transfer possession code "BT" may be used within the following guidelines only:

2.11.7.1. Intracommand (within AETC) transferring aircraft may be possessed by losing unit in this code up to 5 workdays before the transfer date. The gaining unit may use this code up to 5 workdays after the gain date. This code will allow units time to complete pre- or post-transfer inspections and actions in a nonpossessed status. A HQ AETC/LGMA-AVDO transfer message must be received by the gaining or losing unit prior to placing aircraft in "BT" status.

2.11.7.2. Intercommand (into or out of AETC) transferring aircraft may be possessed in this code up to 10 workdays by the gaining or losing unit. A HQ AETC/LGMA-AVDO transfer message must be received prior to placing aircraft in "BT."

2.11.7.3. Aircraft are authorized up to 3 workdays of "BT" possession prior to input into scheduled program depot maintenance (PDM) or contract depot facility (paragraphs **2.11.7.1.** and **2.11.7.2.** do not apply), in order to prepare the aircraft for the scheduled maintenance. Aircraft returning from scheduled PDM or contract depot facility may be placed in "BT" possession code for up to 5 workdays after return of the aircraft. T-43A aircraft are authorized up to 5 workdays of "BT" possession for PDM/contract depot facility input and up to 15 workdays after aircraft return.

2.11.7.4. "BT" time for acceptance inspections will start no later than 0700 hours on the first duty day following the aircraft transfer.

NOTE: If the gaining organization utilizes the aircraft prior to the acceptance inspection use of "BT" possession will not be authorized.

2.11.7.5. For permanent aircraft transfers via PDM or contract depot facility, follow the guidance in paragraphs **2.11.7.1.** or **2.11.7.2.**, whichever applies.

2.11.7.6. Units are authorized the use of "BK" possession when aerospace vehicles are being processed through a major command-directed funded and operated maintenance program. (***For Little Rock AFB:*** The use of "BK" possession is authorized for locally directed C-130 refurbishment program.) It is not to be used when aircraft are undergoing unscheduled maintenance, (i.e., corrosion repair), scheduled inspections, or TCTOs. The following guidelines apply:

2.11.7.6.1. The use of possession purpose code "BK" is only authorized for a total of 15 work or duty days to strip, prepare, and paint an aircraft. ***EXCEPTION:*** Little Rock AFB is authorized a total of 20 work or duty days.

2.11.7.6.2. At any time during the painting process (see paragraph **2.11.7.6.1.**), if maintenance other than stripping, preparing, or painting is performed on the aircraft, then the aircraft will be turned to "TF" possession and the status changed appropriately. The aircraft may be returned to "BK" to complete the paint once the maintenance action has been stopped. However, the total number of "BK" days will not exceed 15 work or duty days.

2.11.7.6.3. If more than 15 work or duty days are required by the unit, a formal message must be sent to HQ AETC/LGMTS, LGMAU, and LGMA-AVDO requesting the additional days and must include justification for the extension request and an estimated completion date. ***For Little Rock AFB:*** If more than 20 work or duty days are required, a formal message must be sent to HQ AETC/LGMTS, LGMAS, and LGMA-AVDO requesting the additional days and must include justification for the extension request and an estimated completion date.

2.11.7.6.4. Aircraft temporarily transferred for bead blasting may remain in "BK" possession with MAJCOM approval if corrosion discrepancies are discovered which must be repaired before returning to home station.

2.11.7.6.5. When an aircraft is transferred for bead blasting and discrepancies are discovered which must be repaired before returning to home station (other than corrosion discrepancies), the aircraft will be placed into possession purpose code "TF" and the status will change from FMC to the appropriate status.

2.14. Units awaiting depot assistance will follow the instructions in paragraphs 2.14. through 2.14.2.2 of the basic when depot assistance conditions are encountered.

2.16. Along with the addresses listed in Attachment 11, add the following address: OO-ALC HILL AFB UT//LIWCC//.

2.17. Along with the addresses listed in Attachment 12, add the following address: OO-ALC HILL AFB UT//LIWCC//.

2.18. Along with the addresses listed in Attachment 13, add the following address: OO-ALC HILL AFB UT//LIWCC//.

2.19. When the possession code changes, send a priority message to HQ AETC/LGMA-AVDO. Include HQ AFMC/LGM-AVDO, Wright-Patterson AFB OH, and the applicable AFMC system program director as information addressees. Only one message is required when aircraft possession is changed between AETC bases. The gaining organization prepares the message if the losing organization ferries the aircraft. The losing organization prepares the message if the gaining organization ferries the aircraft. Units are authorized to submit one AFI 21-103 possession purpose identifier code change message per day with all possession code changes for that day.

2.22.2. Access Core Automated Maintenance System (CAMS) transaction identifier, possession identifier inquiry (PII), AFCSM 21-564, Volume II, *Status and Inventory Reporting*, for an online display of available possession codes. The PII lists codes used in computing equipment possession time and categorizes possession code used in computing reportable equipment status.

2.22.4. Status reporting for ground training aircraft is waived.

2.23.3.1. ***NOTE:*** Aircraft undergoing an FCF due to a maintenance requirement (scheduled or unscheduled) will be reported as not mission capable airworthy (NMCA) (flyable) until released.

2.23.8. Planned scheduled maintenance is defined as required maintenance actions that are planned and published within the daily portion of the weekly utilization and maintenance schedule.

2.23.8.1. Once a planned scheduled maintenance action is started and the time to accomplish the task will exceed 2 hours, code the aircraft NMC at the time the action was started.

2.23.8.3. At the time the workcards for a phase, periodic, ASIP, or isochronal inspection are initiated, the aircraft will be considered NMC.

2.25.8. (Added) Minimum Essential Subsystems Lists (MESL) for AETC-assigned aircraft are specified in **Attachment 19 (Added)** through **Attachment 36 (Added)**. Operating restrictions specified in AETCI 21-101, *Maintenance Management of Aerospace Equipment,* and aircraft technical orders take precedence when determining acceptability for flight. Minimum requirements for a functional check flight (FCF) are determined by the profile required and the FCF pilot. One-time flight procedures are specified in 00-20-series technical orders.

2.25.8.1. AETC-unique mission codes to augment AFI 21-103, *Equipment Inventory, Status, and Utilization Reporting*, Attachment 3, are located in **Attachment 17 (Added)** of this supplement.

2.25.8.2. Each unit's training syllabus determines applicability of basic system list (BSL) columns. Qualifying note codes are used in the MESL to help explain degraded mission systems that are complex or redundant and to define aircraft exceptions.

2.25.8.3. Send proposed changes to the MESLs to HQ AETC/LGMMP, 555 E Street East, Randolph AFB TX 78150-4440. HQ AETC/LGM is the approval authority for changes.

2.29.1. (Added) Send a priority message by the 5th workday of the following month to: HQ AETC Randolph AFB TX//FMAF/LGMA-AVDO/LGXI/SEF/DORA//, 19 AF Randolph AFB TX//LGM//, and AETC TRSS Randolph AFB TX/DO//.

2.29.2. (Added) Outline the month's utilization by mission design series (MDS) as follows:

MDS	FLYING HOURS
NUMBER OF SORTIES	PROGRAM ELEMENT CODE (PEC)
CUMULATIVE TOTAL FOR HOURS	CUMULATIVE TOTAL FOR SORTIES

2.29.3. (Added) Submit utilization data to HQ AFMC for aircraft requiring FCF as a result of undergoing modification by AFMC rapid area maintenance and or contract field team. Use mission symbol O80I (letter O, eight, zero, letter I) and PEC 72007F. ***NOTE:*** It may be necessary to place a zero before and after the first seven.

4.2.1.1. (Added) Each unit appoints an OPR to establish procedures to ensure compliance with Chapter 4.

4.2.1.2. (Added) The resources division of the 982d Training Group is the command OPR for the overall administration and reporting of trainers assigned to training detachments (TD) and maintenance training (MAT). This OPR is authorized to prepare a listing for managing all trainers and maintain a master inventory file on trainers assigned to the TDs and MATs. The OPR sends a copy of the inventory listing to 82d Training Wing/LG, Sheppard AFB TX. Unit OPRs for trainers include the following:

4.2.1.2.1. Maintenance authority (MA) or civil service (contract equivalent) at flying wings and training wings.

4.2.1.2.2. Resources division of the 982d Training Group for mobile training sets used by TDs and MATs.

4.2.1.3. (Added) TDs and MATs are exempt from inputting inventory changes into the host base computer system for type 4 trainers. The MA at the 82d Training Wing will input type 4 trainer inventory changes into CAMS.

6.2.2. Report AETC-unique CE equipment status, using the procedures in paragraph 6.6.1. Do not report on air traffic control device personal computers.

6.2.2.4. (Added) Status reporting exceptions are:

6.2.2.4.1. Nontactical land mobile radios.

6.2.2.4.2. Equipment maintained by contractors, unless the job control function is responsible for contractor notification of outages or the maintenance contract specifies status reporting is required.

6.2.3. Use mission reporting for local reporting only (CAMS report level R).

6.2.4. The systems flight commander or chief determines the need for local mission reporting. If used, mission status reporting will not be used instead of reporting status for equipment or systems.

6.3.4. Mission status, if used, will be green (FMC), amber (PMC), or red (NMC).

6.5.1. Bullet 5. Review CAMS/REMIS KRE (error) files using CAMS transaction identification code (TRIC) REM, screen #877 (AFCSM 21-560, Volume 2, *C-E Equipment Status and Inventory Reporting*). Contact HQ AETC/SCML if you have REMIS reject errors you cannot resolve by using the CAMS/REMIS reconciliation or database auto-correction program, NFS5BO.

6.5.1. Bullet 9. Coordinate with the base host CAMS data base manager to ensure contingency procedures will provide an efficient method to update CAMS quickly and accurately once service is restored.

6.5.1. Bullet 11. (Added) Establish procedures allowing workcenter managers to review, validate, and correct status information in a timely manner. Ensure the accuracy of the available information at all reporting levels.

6.5.3. Bullet 4. If REMIS rejects an equipment load from CAMS because of a duplicate serial number (S/N), immediately delete the data, perform a physical verification of the part number (P/N) and S/N, and reload using the reverified data. If a second reject occurs, then delete the data and reload the equipment in CAMS. Use the following codes that correspond with the appropriate base in the first two positions of the equipment's S/N to be loaded:

Altus:	JA
Columbus:	JC
Fairchild:	KB
Goodfellow:	JG
Keesler:	JK
Kirtland	KA
Lackland:	JL
Laughlin:	JH

Little Rock:	JF
Luke:	JE
Maxwell:	JM
Randolph:	JN
Sheppard:	JB
Tyndall:	JJ
Vance:	JD

6.6.7. (Added) All reportable equipment and system outages will include comments that accurately describe the cause (reason) and effect (mission impact) of the equipment or system outage. Do not use anachronyms (for example, OTS-out of service) in comments to describe the outage. Do not include comments for routine PMIs. For ATCALS equipment (only), include an estimated time in-commission/estimated time to restore (ETIC/ETRO) in a comment when an NMC (red) job will not be closed the same day it was opened. For all equipment and systems, add followup comments when significant changes occur or the ETIC expires. The systems flight commander or chief may require ETICs/ETROs to be entered for other than ATCALS equipment/systems. Do not enter ETICs/ETROs in delay sequences.

6.6.7.1. Only ATCALS equipment and systems require comments when supply transaction delay codes L, M, N, P, Q, and R are used. The systems flight commander or chief may determine other equipment or systems requiring comments to be used with supply delay codes. List supply information for each part placed on order.

6.6.7.1.1. Comment Sequence A. Field descriptions are as follows: Nomenclature/national stock number (if available) and part number/quantity/priority/document number (less first letter)/transportation request number/estimated shipping date/requisition status code/controller's initials. (***NOTE:*** Separate each field with a slash [/].)

6.6.7.1.2. Comment Sequences B, C, D, E, Etc. Use to add more parts placed on order if additional sequences are needed (use format in **6.6.7.1.1.**) and for when parts are received. Field descriptions for when parts are received are as follows: State "Received"/nomenclature/document number/date received/controller's initials.

6.7.1.1. Loading or deleting organizations, detachments, or operating locations must be coordinated with HQ AETC/SCML before processing the load or delete transaction in CAMS.

6.8.1. If the unit number, kind, type, detachment, or operating location needs to be changed, notify HQ AETC/SCML before processing the change transaction in CAMS.

6.9.4.3. (Added) Active and Inactive Equipment:

6.9.4.3.1. Base or Site Location (if used). Enter the first characters of the name or common abbreviation for the base or site.

6.9.4.3.2. Overhaul or Install Date. Enter the date of installation. Do not update for equipment overhaul.

6.9.4.3.3. Host Command. Enter the AETC command code: OJ (AFCSM 21-560, Volume 2).

7.8. The AETC POC's address is HQ AETC/LGMTA, 555 E Street East, Randolph AFB TX 78150-4440.

9.1.3. The AETC POC's address for aircraft equipment is HQ AETC/LGM, 555 E Street East, Randolph AFB TX 78150-4440. The AETC POC's address for weapons delivery equipment is HQ AETC/LGMW, 73 Main Circle, Suite 1, Randolph AFB TX 78150-4549.

9.2.3.1. (Added) The operation support squadron (OSS), plans, scheduling, and documentation (PS&D) or civilian equivalent will:

9.2.3.1.1. Task each operation squadron's (OS) PS&D or civilian equivalent by memorandum to identify individuals accountable for -21 and SPRAM assets.

9.2.3.1.2. Identify the -21 SPRAM account custodians by name, grade, and telephone number, and forward the memorandum to OSS PS&D.

9.2.3.1.3. Consolidate squadron -21 SPRAM custodian listings and provide a copy to all squadron -21 SPRAM accountable individuals.

9.2.3.1.4. Use this memorandum to notify accountable agencies of aircraft deployments, transfers, or arrival of new equipment so custodians can adjust records accordingly.

9.2.3.1.5. Forward a copy of the memorandum to the host base supply equipment management element.

9.2.3.2. (Added) The equipment custodian or accountable individuals will:

9.2.3.2.1. Control equipment in serviceable condition, including items in extended storage.

9.2.3.2.2. Use automated or manual reports or AF Forms 1297, **Temporary Issue Receipt**, to control equipment.

9.2.3.2.3. Maintain reports that identify equipment by type, serial number, date issued, and accountable squadron individual.

9.2.3.3. (Added) Accountable squadron individuals will:

9.2.3.3.1. Acknowledge responsibility by signing the equipment control report.

9.2.3.3.2. Be the point of contact to the group accountable individuals for resolving equipment problems.

9.2.3.3.3. Track location of equipment deployed, installed on aircraft, in repair, or stored in support sections.

9.2.3.3.4. Ensure in-use equipment is monitored and scheduled for maintenance as required.

9.3.5. Squadrons are accountable for COMSEC equipment. Each squadron may establish COMSEC subaccounts of the base account. Units without sufficient safeguards or storage space within the squadron may maintain or store COMSEC equipment in the maintenance squadron until sufficient safeguards or storage space is acquired within the squadron. Units establish procedures to track location and status of all COMSEC equipment.

9.4.1.1. (Added) Coordinate with applicable HQ AETC weapons system managers for required changes in -21 T.O.s and command-peculiar equipment.

9.4.1.2. (Added) Owning units account for installed specialized or classified equipment.

9.6.3. Maintain accountability files according to AFMAN 37-139 (64 series).

9.6.4.1. Accountable individual annotates the -21 T.O. with the applicable ERRC to indicate which assets are managed as repairable.

9.6.5.3. Calculate total quantities authorized using quantities listed in applicable -21 T.O.s multiplied by the number of assigned unit aircraft. HQ AETC/LGMW ensures item managers have visibility of XD coded munitions -21 assets according to AFMAN 23-110, *USAF Supply Manual*. All other units manage

all munitions related -21 equipment using AF Form 2691, **Aircraft/Missile Equipment Property Record,** and supporting documentation. Quantity variances of armament and munitions to -21 T.O. levels require HQ AETC/LGMW approval.

9.6.5.4. (Added) Accountable individuals monitor expendable (XB3) assets identified in sections I, II, and III of the applicable -21 T.O. to ensure on-hand quantities are sufficient to meet unit needs. The following guidance applies:

9.6.5.4.1. Use AF Form 2691 to maintain visibility of these items. Maintain one AF Form 2691 for each applicable line item in the -21 T.O.

9.6.5.4.2. Accomplish and document annual inventories by placing the date in Block A and writing "INV" in Block E. Adjust quantities and locations accordingly.

9.6.5.4.3. Units may place selected expendable assets on bench stock to serve as spares if consumption data warrants. Annotate levels established for bench stock in block J. Actual on-hand level in bench stock need not be updated.

9.6.5.4.4. Expendable assets placed on bench stock are exchanged on a one-for-one basis. Exchange of item or AETC Form 138, **Lost Tool/Chit Investigation Record,** is required to maintain accountability. Retain AETC Forms 138 in Tab D of the custodial file for 1 year.

9.6.5.4.5. Dash 21 items locally manufactured to replace -21 T.O. items reference the same line item number as listed in the -21 T.O. Additional locally manufactured items maintained, but not listed in the -21 T.O., reference local line item numbers; for example, L-1, L-2, etc.

9.6.5.4.6. Units develop local procedures to identify all locally manufactured items, accountable agency and appropriate line item number. Disposal of excess quantities of serviceable armament/munitions -21 assets require HQ AETC/LGMW approval.

9.7. Bullet 1. For aircraft support equipment, the HQ AETC POC's address is: HQ AETC/LGM, 555 E Street East, Randolph AFB TX 78150-4440. For weapons delivery equipment, the HQ AETC POC's address is: HQ AETC/LGMW, 73 Main Circle, Randolph AFB TX 78150-4440.

9.7. Bullet 2. The R25 SPRAM listing is the asset inventory for all repairable coded XD assets. The CA/CRL listing is the asset inventory for equipment coded assets (ERRC NF/ND). Maintain AF Forms 2691 to provide unit visibility over XF3 and expendable (XB3) assets in sections I, II, and III of the applicable aircraft -21 T.O. Account custodians maintain a custodian file according to AFMAN 23-110, Volume 2, Part 13, and also **Figure 9.1.**.

9.7. Bullet 6. The operations group commander (OG/CC) assigns responsibilities for aircraft travel pods. The armament flight exercises daily control and management for all armament-related suspension equipment.

9.7. Bullet 8. The HQ AETC/LGMA, LGMAA, LGMAF, LGMAU, and LGMW weapons systems managers conduct annual reviews of each weapon system -21 T.O. The reviews ensure authorizations are adequate to support employment roles and identify changes required in authorizations. In addition, the weapons system managers review each unit's -21 asset levels and reallocate assets within AETC as required.

9.9.1. Bullet 2. Forward a copy of unit inventory results to the appropriate HQ AETC weapons system managers not later than 30 September annually. Report shortages impacting unit mission via message to applicable weapons system manager. Hold disposition of overages pending MAJCOM reconciliation.

9.9.2.1. (Added) The workcenter responsible for maintaining the aircraft is also responsible for control of and accountability for all associated aircraft -21 equipment.

Figure 9.1. Requirements for Custodian File.

Tab A, Current Action:
- AF Forms 2691
- R25 (SPRAM) listing (if only for -21 equipment)

Tab B, Information Files:
- AF Forms 1297, **Temporary Issue Receipt**, or
- In-use equipment reports

Tab C, Suspense and Completed Files:
- Suspense: Due-out requests and supporting documents
- Completed: Hold completed actions until new R25 is received

Tab D, Adjustment Documents:
- Copy of applicable AETC Form 138
- Report of Survey
- AF Forms 2692, **Aircraft/Missile Equipment Transfer/Shipping Listing**; DD Forms 1149, **Requisition and Invoice/Shipping Documents,** or DD Forms 1348-1a
- Authorization for SPRAM assets

Tab E, Register of Control Numbers:
- AF Forms 126, **Customer Request Log**
- DO4, D18, and M30 (for SPRAM assets)

Tab F, Regulations and Certifications:
- Copy of this supplement and any applicable unit supplement
- Current custodian designation letter
- AF Forms 2426, **Training Request and Completion Notification**, or other certification of equipment management training for primary and alternate custodians

9.9.2.2. (Added) The armament flight or off-equipment armament function has the accounting responsibility for all weapons delivery (work unit code 75000 series) -21 alternate mission equipment (AME) spares that require off-equipment scheduled maintenance by the applicable aircraft -6 T.O.s. Accountability for all adapters, and all weapons delivery -21 spares wiring harnesses and cables lies with the workcenter responsible for maintaining the aircraft. Specific SPRAM accounting guidance is in AFMAN 23-110, Volume 2, Part 13, Chapter 9.

9.9.2.3. (Added) All weapons delivery (work unit code 75000 series) -21 normally installed equipment (NIE) is controlled and accounted for by the weapons function of the workcenter responsible for maintaining the aircraft.

9.9.4.1. For airlift and tanker aircraft, also update the inventory listing using the applicable programs (F9002, F9015) in CAMS for mobility (GO81).

9.9.4.3. Inventory and reconcile the CA/CRL account at least once a year and report shortages impacting unit mission capability via message to the applicable HQ AETC weapons system manager.

9.9.5. ***NOTE:*** (Added) The OSS PS&D or civilian equivalent function will control TCTOs on -21 items according to AFI 21-101, *Maintenance Management of Aircraft*.

9.20. (Added) Forms Adopted. DD Forms 1149 and 1348-1a; AF Forms 126, 1297, 2426, 2691, and 2692; AFTO Form 92; and AETC Form 138.

Attachment 17 (Added)

AETC-UNIQUE MISSION CODES

AAD	Aerial Delivery
ADA	Aerial Delivery, Cargo
ADB	Aerial Delivery, Cargo and Personnel
ADP	Aerial Delivery, Personnel
ALM	Airlift Evacuation, Medical
ALR	Airlift, Air Refueling
AMC	Airborne Mission Commander
ALP	Airland, Palletized Cargo
ALR	Airland, Palletized Cargo, Air Refueling
ARC	Airland, Rolling Cargo
ARD	Airland, Rolling Cargo, Air Refueling
CCT	Combat Crew Training
CEL	Celestial Navigation Mission (Day and Night)
CFI	Central Flight Instructor
CFM	Cargo Familiarization
CNT	Contact
CNV	Conventional
EP	Emergency Procedures
FOR	Formation
IMC	Instrument Meteorological Conditions
ITQ	Instructor Training School Initial Qualification
LCL	Local Area
LOL	Low Level
MAN	Marine Aerial Navigation School
NDF	Night Drop Familiarization
NTA	Navigation Training, Advanced
NTB	Navigation Training, Basic
NVG	Night Vision Goggles
OWM	Over-Water Mission
PAV	PAVE LOW
PF	Proficiency Flying Time
PPS	Profile (Area)/Pattern (VMC or IMC) Sortie
REM	Remote
TF	Terrain Following
TTD	Tactical Training, Day
TTN	Tactical Training, Night
VMC	Visual Meteorological Conditions
XC	Off-Station Sortie (dual or solo)
XCT	Off-Station Sortie, Training

Attachment 18 (Added)

COMMONLY USED POSSESSION PURPOSE IDENTIFIER CODES

Table A18.1. Field and Depot Level Maintenance Codes.

ITEM	A Code	B Approval Authority	C Definition
FIELD LEVEL MAINTENANCE CODES			
1	BJ	T.O. 00-25-107. Request will be submitted prior to use and must be coordinated through the system manager and the MAJCOM AVDO.	Crash/Battle Damage Awaiting AFMC Assistance or Decision (Note 1): Aerospace vehicles and trainers for which AFMC assistance has been requested for repair of crash or battle damage and will be effective upon submission of AFTO Form 92, **Aerospace Vehicle Condition Inspection Report,** IAW T.O. 1-1-638 and will apply until actual transfer of possession to AFMC.
2	BK	AFI 21-103/AETC Sup 1	Command Programmed Maintenance (Note 1): Aerospace vehicle being processed through a major command-directed funded and operated maintenance program (i.e., command central corrosion facility). Not used when aircraft are undergoing unscheduled maintenance, scheduled inspections, or TCTO. **Must be approved by the MAJCOM headquarters prior to use.**
3	BL	A formal request will be submitted to the system manager and MAJCOM AVDO prior to use.	Extended Transit Maintenance (Note 1): Applies to aerospace vehicles when transient maintenance requires more than 7 days to repair the transient aerospace vehicle. The gain will be reported by the organization responsible for the maintenance.
4	BN	A formal request will be submitted to the system manager and MAJCOM AVDO prior to use.	Crash Damage Base (Note 1): Aerospace vehicles and trainers on which AFMC assistance is not required for repair of crash damage.
5	BQ	T.O. 00-25-107. Request will be submitted prior to use and must be coordinated through the system manager and the MAJCOM AVDO.	Major Maintenance Awaiting AFMC Decision/Action (Note 1): Aerospace vehicles and trainers for which AFMC has been requested to provide repair assistance beyond the possessing command's ability. Use will begin when the aerospace vehicle or trainer is no longer usable for its intended purpose and the request for assistance is submitted. The use will continue until the decision is provided the repair action taken or possession transferred to AFMC. Crash damaged aerospace vehicles will not be reported as BQ.

ITEM	A Code	B Approval Authority	C Definition
6	BR	A formal request will be submitted to the system manager and MAJCOM AVDO prior to use.	Major Maintenance Awaiting Parts (Note 1): Aerospace vehicles and trainers that require major maintenance for which the necessary major components have not been programmed and are not available in AF stocks. Use of this code is restricted to large-scale programs, e.g., replacement of all T-38 wings, and not to single isolated incidents. Use of the code must be agreed upon by both the operating MAJCOM and the system manager. Aerospace vehicles and trainers in BR status are not MICAP reportable.
7	BT	AFI 21-103/AETC Sup 1	Aerospace Vehicle Transfer (Note 1): Applies to aerospace vehicle transfers for the period of time that the aircraft is not available to accomplish its assigned mission. To be used for reporting during the period of transfer beginning with preparation for transfer through recovery after arrival at the new location. Aircraft assigned this code will not be considered available for generation during operational readiness inspection (ORI) and will not be chargeable to unit NMC/PMC rates. **Use of this code is optional, but must be approved by MAJCOM headquarters prior to use.**
DEPOT LEVEL MAINTENANCE CODES			
8	BU	A formal request will be submitted to the system manager and MAJCOM AVDO prior to use.	Depot level maintenance - depot level work performed at unit level, when AFMC has formally acknowledged acceptance of the responsibility to repair the aerospace vehicle IAW T.O. 00-25-107 and ALC has authorized repair by possessing unit. Work is performed by the owning unit to expedite the repair action when the unit possesses the technical expertise and support equipment, and is qualified to accomplish the repair. Use of this code must be agreed upon by both the operating MAJCOM and the system program manager. The use will continue until the repair action is complete or the possession is changed to flyable code.
9	BW		Weather/Bird Strike Damage Awaiting AFMC Assistance or Decision (Note 1): Aerospace vehicle has been requested for repair of aircraft damage and will not be effective upon submission of AFTO Form 92, IAW T.O. 1-1-638 and will apply until actual transfer of possession to AFMC.
10	BX		Weather/Bird Strike Damage Base (Note 1): Aerospace vehicles and trainers on which AFMC assistance is not required for repair of aircraft damage.

ITEM	A Code	B Approval Authority	C Definition
11	DJ		Depot Level Maintenance Possession—Depot Level Work (Note 1): Applies to aerospace vehicles awaiting depot-level work either at a depot, contract facility, or the base organization location (to be performed by depot, contract, or rapid area maintenance [RAM]/field teams), or awaiting shipment to the appropriate repair facility. To be used when AFMC assistance has been requested and AFMC has formally acknowledged acceptance of the responsibility to repair the aerospace vehicle IAW T.O. 00-25-107.
12	DK		Contract Work (Note 1): Aerospace vehicles and trainers on contract to a civilian repair facility (domestic or foreign) for the performance of programmed depot maintenance (PDM), repair, modification, modernization, instrumentation, T.O. compliance reconditioning. Aerospace vehicles receiving maintenance as DK will be reported as possessed by AFMC.
13	DM		Depot Level Maintenance Possession—Depot Level Work RAM/Field Teams (Note 1): Aerospace vehicles undergoing maintenance beyond organizational/ intermediate level capability. Includes depot-level work being performed at the base organization location by depot, contract, or RAM/field teams.
14	DO		Depot Level Maintenance Possession—Depot Work (Note 1): Aerospace vehicles and trainers at Air Force depots (domestic or foreign) undergoing programmed depot maintenance (PDM), repair, modification, modernization, technical order compliance instrumentation and reconditioning.
15	DR		Post Depot/Contractor Maintenance (Note 1): Applies to aerospace vehicles after depot work (DO or DN), contract work (DK), or RAM/field team (DM) maintenance have been completed and the vehicle is in preparation for functional check flight (FCF) or delivery to the organization that will possess it. To be used from the time when the aircraft has been released for FCF, during FCF, and the maintenance required after the FCF.
16	TF		Training: Aerospace vehicles assigned or possessed to accomplish student training, combat crew training, or dissimilar air combat training, or combat crew training.

ITEM	A Code	B Approval Authority	C Definition
17	TJ		Ground Instruction Active (Note 2): Trainer and temporarily assigned or possessed aerospace trainers and temporarily assigned aerospace vehicles used for ground instruction purposes.
18	TX		Ground Instruction Inactive (Note 2): Aerospace vehicles normally with a G prefix permanently assigned or possessed for ground instructional purposes.

NOTES:

1. For use as possession reporting identifiers only.
2. For use as both assignment and possession reporting identifiers.

Attachment 19 (Added)

T-1A MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)				
WUC	**System/Subsystem**		**LCL**	**IMC**	**VMC**	**FOR**	**AR**
11***	Airframe	X	X	X	X	X	X
12***	Flight Deck	X	X	X	X	X	X
12***	Cabin/Galley	X1					
13***	Landing Gear	X	X	X	X	X	X
14***	Flight Control	X	X	X	X	X	X
23***	Turbofan Powerplant	X	X2	X2	X2	X2	X2
41A**	Bleed Air Mode Control Switch	X	X3	X3	X3	X3	X3
41AC*	Vapor Cycle Cooling	X					
41D**	Pressure Control System	X	X	X	X	X	X
41E**	Ice/Rain Removal System	X	X4	X4	X4	X4	X4
42***	Electrical Power System	X	X	X	X	X	X
44***	Exterior Lights	X	X5	X5	X5	X5	X5
44***	Interior Lights	X6	X6	X6	X6	X6	X6
45***	Hydraulic Power Supply	X	X	X	X	X	X
46***	Fuel System	X	X	X	X	X	X
47***	Oxygen System	X	X	X	X	X	X
49***	Miscellaneous Utilities	X	X	X	X	X	X
51***	Flight Instruments	X	X	X	X	X	X
51BA*	Digital Clock	X	X7	X7	X7	X7	X7
51BA*	Standby Horizon Indicator	X	X	X	X	X	X
51BB*	Accelerometer	X	X	X	X	X	X
57A**	Autopilot	X					
57A9*	Stability Augmentation	X	X8	X8	X8	X8	X8
57B**	Position Computing	X					
57C**	Attitude and Direction	X	X	X	X	X	X
62***	VHF Radio	X	X9	X9	X9	X9	X9
63***	UHF Radio	X	X	X	X	X	X
64***	Interphone	X	X	X	X	X	X
65***	IFF (Modes A, C, and S)	X	X10	X10	X10	X10	X10
71***	Radio Navigation	X	X	X	X	X	X
71CD*	GPS	X11					X
72***	Radar Navigation	X					
91***	Emergency Equipment	X	X	X	X	X	X

Legend:

AR Air Refueling
FOR Formation
IMC Instrument Meteorological Conditions
LCL Local Area
VMC Visual Meteorological Conditions

NOTES:

1. Upper and or lower decanter not required for flight. Toilet not required for flight.
2. Aircraft with engines requiring special oil analysis surveillance and or sampling are restricted to local area missions.
3. Manual temperature control required.
4. Required if icing conditions are forecast or present.
5. Two of three strobes must operate for all missions.
6. Not including passenger area.
7. One clock must be operational.
8. Not applicable if flight planned below 28,000 feet.
9. May be reported PMC if local conditions allow.
10. Restricted to day local pattern - only missions with local air traffic control approval.
11. If equipped.

Attachment 20 (Added)

T-37B MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)			
WUC	**System/Subsystem**		**VMC**	**LCL**	**IMC**	**XCT**
11***	Airframe	X	X	X	X	X
111**	Windshield and Canopy	X	X1	X1	X1	X1
12***	Cockpit	X	X2	X2	X2	X2
13***	Landing Gear/Brakes	X	X	X	X	X
14***	Flight Controls	X	X3	X3	X3	X3
23***	Turbojet Powerplant	X	X4	X4	X4	X4
411**	Air-Conditioning and Defrosting	X	X2	X2	X2	X2
42***	Electrical Power Supply	X	X	X	X	X
441**	Exterior Lights	X			X5	X5
44***	Interior Lights	X			X	
451**	Hydraulic and Pneumatic System	X	X	X	X	X
46***	Fuel System	X	X	X	X	X
47***	Oxygen System	X	X2	X2	X2	X2
491**	Fire Detection and Overheat System	X	X	X	X	X
511**	Flight Instrumentation	X	X5	X5	X5	X5
512**	Navigation Instrumentation	X	X6	X6	X6	X6
51212	Clock	X2				
515**	Electrical System (DC)	X	X	X	X	X
516**	Utility Instrumentation	X	X	X	X	X
517**	Fuel Quantity System	X	X	X	X	X
55B**	MXU-553 Life History Recorder	X7				
633**	UHF Radio System	X	X	X	X	X
641**	Interphone System	X	X2	X2	X2	X2
65***	IFF (Including Mode C)	X	X8	X8	X8	X8
712**	DME	X		X9	X8	X8
713**	Instrument Landing System	X			X	X
713**	VHF/VOR	X	X	X	X	X
91***	Emergency Equipment	X	X	X	X	X
97A00	Egress System	X	X	X	X	X

Legend:

IMC Instrument Meteorological Conditions
LCL Local Area
VMC Visual Meteorological Conditions
XCT Off-Station Sortie, Training

NOTES:

1. Aircraft with canopy or windscreen distorted/crazed within T.O. limits are restricted to dual day local visual meteorological conditions (VMC) or no formation flights (rated pilot decision).
2. Aircraft may be flown solo with discrepancies in the right cockpit that do not affect safety of flight. Restricted to solo if only right interphone is inoperative. Clock is required for low-level missions. Air-conditioning manual mode required for all missions.
3. For flap blowup check due, aircraft is restricted to dual or solo local VMC with a rated pilot. For lift computer adjustment due, aircraft is restricted to local VMC with a pilot qualified to adjust the lift computer in left seat.
4. Restricted to local with a rated pilot for first flight when an engine is replaced with a non-FCF engine (SUPT only). Aircraft with engines requiring special oil analysis surveillance and or sampling are restricted to local mission.
5. Inoperative landing and taxi light restricted to day local VMC (dual or solo) if no instrument or straight-in approaches are planned. One anticollision beacon must fully operate for day flying if either strobe is not functional. Both anticollision beacons or both strobes must operate for night flying. Both anticollision beacons must operate for local night flying.
6. For compass swing due, aircraft is restricted to dual day local VMC or solo with a rated pilot.
7. If installed.
8. Restricted to day local VMC for home field pattern only missions with local air traffic control approval. Self-test feature not required if system is operative.
9. Restricted to dual day local or solo only with a rated pilot.

Attachment 21 (Added)

T-38A/AT-38B MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**VMC**	**LCL**	**IMC**	**XCT**	**AAC**	**ASC**
11***	Airframe	X	X	X	X	X	X	X
11***	Windshield/Canopy	X	X1	X1	X1	X1	X1	X1
1152*	Pylon	X2					X	X2
121**	Cockpit and Controls	X	X1/3	X1	X1/3	X1	X	X
13***	Landing Gear and Brakes	X	X	X	X	X	X	X
14***	Flight Controls	X	X	X	X	X	X	X
23***	Turbojet Powerplant/Gearboxes	X	X4	X4	X4	X4	X4	X4
41***	Air-Conditioning, Pressurization and Anti-Ice Control	X	X5	X5	X5	X5	X5	X5
42***	Electrical System	X	X	X	X	X	X	X
4411*	Exterior Lights	X	X6	X6	X6	X6	X6	X6
442**	Interior Lights	X7			X	X		
45***	Hydraulic and Pneumatic Power	X	X	X	X	X	X	X
46***	Fuel System	X	X	X	X	X	X	X
47***	Oxygen System	X	X	X	X	X	X	X
49***	Miscellaneous Utilities	X	X	X	X	X	X	X
511**	Instruments	X	X1/8	X1/8	X1/8	X1/8	X	X
51111	Accelerometer	X	X9	X9	X9	X9	X9	X9
51211	Clock	X	X10	X10	X10	X10	X10	X10
513**	Angle of Attack (AOA)	X	X11	X11	X11	X11	X11	X11
552**	AVTR	X					X12	X12
55B**	Recording Equipment	X12						
63B**	UHF Radio, AN/ARC-164	X	X1	X1	X1	X1	X1	X1
64B**	Interphone, AN/AIC-18	X	X1	X1	X1	X1	X1	X1
65A**	IFF	X	X13	X13	X13	X13	X13	X13
65C**	AIMS, AN/APX-64	X	X	X	X	X	X	X
71B**	Instrument Landing System	X			X	X		
71Z**	TACAN	X	X	X	X	X	X	X
742**	Optical Sight	X					X2	X2
75***	Weapons Delivery	X					X2	X2
91***	Emergency/Personnel Equipment	X	X1	X1	X1	X1	X1	X1
97***	Egress System	X	X	X	X	X	X	X

Legend:

AAC Air to Air, Conventional
ASC Air to Surface, Conventional
IMC Instrument Meteorological Conditions
LCL Local Area
VMC Visual Meteorological Conditions
XCT Off-Station Sortie, Training

NOTES:

1. Restricted to solo only with rear cockpit discrepancies that do not affect safety of flight, including rear canopy visual distortion, discoloration, or crazing within technical order limits (rated pilot decision) and inoperative interphone.
2. AT-38B only when required.
3. Blind flying hood is restricted from IMC missions. ***NOTE:*** Not required for AT-38 missions.
4. Restricted to local and rated pilot for first flight when an engine is replaced with a non-FCF engine (SUPT only). Aircraft with engines requiring special oil analysis surveillance and or sampling are restricted to local missions.
5. Air-conditioning manual mode required if auto mode is inoperative.
6. Landing and taxi light portion of system required for all missions. Restricted to day missions as long as one beacon operates. Both beacons must be operational for night missions.
7. Interior lights required for night sorties.
8. Restricted to dual day local VMC or solo with a rated pilot for compass swing due.
9. Restricted to instrument and or navigation missions when rear cockpit accelerometer is inoperative. FCP accelerometer required for all AAC and ASC AT-38B missions.
10. FCP clock is required for all low-level missions.
11. AOA not required for aircraft being input to or returning from program depot maintenance or contract field team repair facilities.
12. If installed. ***NOTE:*** Not required for all training syllabuses.
13. Restricted to day local pattern only missions with local air traffic control approval. Self-test feature not required if system is operative. A flight with an inoperative IFF or SIF is authorized for formation sorties with a minimum of one operable IFF or SIF per element.

Attachment 22 (Added)

T-43A MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)						
			ITQ	LOL	OWM	NTB	NTA	CEL	MAN
11***	Airframe	X	X	X	X	X	X	X	X
12***	Cockpit/Training Compartment	X	X	X	X	X	X	X	X
13***	Landing Gear/Brakes	X	X1	X1	X1	X1	X1	X1	X1
14***	Flight Controls	X	X	X	X	X	X	X	X
14G**	Automatic Spoiler System	X	X2	X2	X2	X2	X2	X2	X2
23T**	Turbofan Power Plant	X	X3	X3	X3	X3	X3	X3	X3
24***	Auxiliary Power Unit	X4			X				
41***	Air-Conditioning, Pressurization, and Anti-Ice System	X	X5/6	X5/6	X5/6	X5/6	X5/6	X5/6	X5/6
42***	Electrical Power Supply	X	X7	X7	X	X7	X7	X7	X
44***	Exterior Lights	X	X8	X8	X8	X8	X8	X8	X8
45***	Hydraulic/Pneudraulic System	X	X	X	X	X	X	X	X
46***	Fuel System	X	X9	X9	X9	X9	X9	X9	X9
47***	Oxygen System	X	X	X	X	X	X	X	X
49***	Fire Detection/ Extinguishing System	X	X	X	X	X	X	X	X
51A**	Flight/Navigation Instruments	X	X	X	X	X	X	X	X
51AG*	Periscope Sextants	X	X		X		X	X	X
51B**	AHRS	X	X	X	X	X	X	X	X
51B**	C9D	X	X	X	X	X	X	X	X
51C**	Multiple Station Display	X	X	X	X	X	X	X	X
51H**	Ground Proximity Warning	X	X	X	X	X	X	X	X
52A**	Autopilot Yaw Damper	X		X10	X10	X10	X10	X10	X10
62***	VHF Communication	X	X11	X11	X11	X11	X11	X11	X11
63***	UHF Communication	X	X12	X12	X12	X12	X12	X12	X12
64***	Interphone	X	X	X	X	X	X	X	X
65***	IFF (Including Mode C)	X	X	X	X	X	X	X	X
71AA*	LORAN	X							
71AB*	VOR/Instrument Landing System	X	X	X	X	X	X	X	X
72AB*	Radar	X	X	X	X	X	X	X	X

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)						
			ITQ	LOL	OWM	NTB	NTA	CEL	MAN
72BH*	Combined Altitude Radar Altimeter	X							X
73A**	Navigation Computer System	X	X	X	X	X	X	X	X
73B**	INS	X	X	X	X	X	X	X	X
91***	Emergency Equipment	X	X	X	X	X	X	X	X
97***	Explosive Squib	X	X	X	X	X	X	X	X

Legend:

CEL Celestial Navigation Mission (day and night)
ITQ Instructor Training School Initial Qualification
LOL Low Level
MAN Marine Aerial Navigation School
NTA Navigation Training, Advanced
NTB Navigation Training, Basic
OWM Overwater Mission

NOTES:

1. Antiskid may be inoperative if operations are conducted in compliance with T.O. 1T-43A-1.
2. Automatic spoiler control may be deactivated if operations are in compliance with T.O. 1T-43A-1.
3. One tachometer may be inoperative if the other tachometer and fuel flow indicator for the affected engine are operating normally.
4. Only required if mission is dependent on its use; for example, operations from a location that cannot provide an external power source.
5. One air-conditioning (A/C) pack may be inoperative on flights below 25,000 feet MSL. For any operating A/C pack, the cabin temperature manual or automatic control must be operative. Both A/C packs may be inoperative for unpressurized flight provided the outflow valve is open. Wing anti-ice valve may be inoperative if the valve is manually closed and the electrical power connector is disconnected.
6. The cabin altimeter or cabin differential pressure indicator must be operative. If either are inoperative, a chart must be provided to convert cabin differential pressure to cabin altitude or convert

cabin altitude to cabin differential pressure (not required for unpressurized flight). Cabin pressure control standby and manual modes required on all flights if the respective package is operating.

7. One generator or constant speed drive may be inoperative provided the auxiliary power unit and its generator are operating and supplying power to the electrical system.
8. Must meet AFI 11-202, Volume 3, *General Flight Rules*, and AETC Supplement 1 requirements.
9. One wing boost pump is inoperative in each tank if a minimum of 4,800 pounds of fuel is maintained in the affected tank.
10. PMC when inoperative. Restrict use of aileron axis to 30,000 feet or below.
11. May be inoperative if the UHF communication system is operational.
12. May be inoperative if the VHF communication system is operational.

Attachment 23 (Added)

F-15A/B/C/D MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below) (note 1)	
WUC	**System/Subsystem**		**ASY**	**ADC**
11***	Airframe	X	X	X
12***	Cockpit and Fuselage Compartments	X	X	X
13***	Landing Gear	X	X	X
14***	Flight Controls	X	X	X
23***	Turbofan Powerplant	X	X	X
24***	Secondary Powerplant	X	X	X
41***	Air Conditioning, Pressurization, and Anti-Ice Control System	X	X2	X2
42***	Electrical Power Supply	X	X	X
44A**	Exterior Lighting System	X3	X4	X4
44B**	Interior Lighting System	X	X	X
45***	Hydraulic System	X	X	X
46***	Fuel System	X	X	X
47***	Oxygen System	X	X	X
49***	Miscellaneous Utilities	X	X	X
51***	Instruments	X	X1	X1
52***	Autopilot	X		
52A**	Control Augmentation System	X	X	X
55***	Malfunction Analysis and Recording	X		
55AE*	Built-In Test Display Group	X	X	X
57***	Integrated Guidance and Flight Control System	X	X	X
63A**	UHF Communications Set	X5	X5	X5
63B**	Integrated CNI Control	X	X	X
63C**	Intercommunication	X6		
65***	IFF	X	X	X
71A**	Inertial Navigation Set, AN/ASN-109	X	X	X
71B**	Directional Finder Group	X		
71C**	Instrument Landing Set	X	X7	X7
71F**	Attitude Heading Reference Set	X	X	X
71M**	Inertial Navigation/Ring Laser Gyro	X	X	X
71Z**	Tactical Air Navigation	X	X7	X7
74***	Fire Control System	X	X	X
74L**	Video Tape Recorder System	X		
75***	Weapons Delivery	X	X8	X8
75H	Gun System	X	X9	X9
76***	Electronic Countermeasures	X	X	X

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below) (note 1)	
			ASY	ADC
76B**	ALR-56	X	X	X
76G**	Electronic Warfare Warning Set, ALQ-128	X	X	X
76K**	Countermeasures Dispenser	X	X10	X10
91***	Emergency Equipment	X	X	X
97***	Explosive Devices and Components	X	X	X

Legend:

ADC Air Defense, Conventional

ASY Air Superiority

NOTES:

1. Redundant rear cockpit systems, subsystems, and components that do not affect safety of flight or front seat operation are not required to be operatonal for BSLs. Report as PMC.
2. Manual mode only required.
3. As required by AFI 11-202, Volume 3, *General Flight Rules,* and AETC Supplement 1.
4. Strip lighting and landing lights required as a minimum.
5. Have Quick/Secure Voice required if aircraft is equipped.
6. Applies to B and D models only.
7. Either instrument landing system or TACAN must be operational.
8. All eight weapons stations required for FMC. Any combination of six required for PMC.
9. Training missions not requiring firing of the gun on aircraft with gun system deficiencies that do not restrict flight operations report as PMC.
10. All eight Countermeasures Dispensers required for FMC. One of the CMD system required for PMC.

Attachment 24 (Added)

F-16A/B/C/D MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)			
WUC	**System/Subsystem**		**ADC**	**ASC**	**ASY**	**ASN**
11***	Airframe	X	X	X	X	X
12***	Crew Station System	X	X	X	X	X
13***	Landing Gear System	X	X	X	X	X
14***	Flight Control System	X	X1	X1	X1	X
23***	Turbofan Power Plant (PW engines)	X	X	X	X	X
24***	Auxiliary Power Plant/Jet Fuel Starter	X	X	X	X	X
27***	Turbofan Power Plant (GE 110)	X	X	X	X	X
41***	Environmental Control System	X2	X2	X2	X2	X2
42***	Electrical Power Supply	X	X3	X3	X3	X3
44A**	Exterior Lighting	X4	X5	X5	X5	X5
44B/C	Interior Lighting	X	X	X	X	X
45***	Hydraulic & Pneumatic System	X	X	X	X	X
46***	Fuel System	X	X	X	X	X
47***	Oxygen System	X	X6	X6	X6	X6
49A**	Fire Detection System	X	X	X	X	X
49B**	Overheat Detection System	X	X	X	X	X
51***	Flight Instruments	X	X7	X7	X7	X7
61***	HF Communications	X	X			
62***	VHF Communications	X8	X8	X8	X8	X8
63***	UHF Communications	X8	X8	X8	X8	X8
64***	Interphone	X	X9	X9	X9	X9
65***	IFF	X	X	X	X	X
71***	Radio Navigation	X	X	X	X	X
71D**	Global Positioning System	X	X	X10	X	X
74***	Fire Control System	X	X	X	X	X
74G**	Airborne Video System	X11				
74H**	Data Transfer Unit	X	X12	X	X	X
74L**	Radar Altimeter System	X		X10		X10
74N**	Targeting Pod (GTP) System	X13		X13		X13
74P**	Navigation Pod (VP) System	X13		X13		X13
75***	Weapons Delivery System	X	X14	X14	X14	X14
75A**	Gun System	X	X15	X15	X15	
76***	Electronic Counter Measures	X	X	X	X	X
76B/C	Radar Warning Receiver	X	X	X	X	X
76Y	Chaff/Flare Dispensing System	X	X	X	X	X
91***	Emergency Equipment	X	X	X	X	X

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)			
			ADC	ASC	ASY	ASN
97***	Explosive Devices and Components	X	X	X	X	X

Legend:

ADC Air Defense, Conventional
ASC Air to Surface, Conventional
ASN Air to Surface, Nuclear
ASY Air Superiority

NOTES:

1. Excludes indicator override, leading edge flap indicator, and speed bake indicator.
2. Manual mode only required.
3. Excludes external power system.
4. As required by AFI 11-202, Volume 3, *General Flight Rules*, and AETC Supplement 1.
5. Minimum navigation/formation light requirements for PMC include one anti-collision, one position light per wing, both inlet lights, and tail navigation light. Landing and taxi lights required as a minimum for PMC.
6. Excludes quantity check switch.
7. Excludes secondary instruments and rear cockpit accelerometer.
8. Have Quick/Secure Voice required if aircraft is equipped.
9. Applies to B and D models only if rear cockpit is occupied.
10. Required for aircraft performing the LANTIRN mission only.
11. If equipped.
12. Excludes Air National Guard ADF aircraft.
13. Aircraft systems must be capable of LANTIRN operation to be FMC regardless of pod operation.
14. For air-to-air, all four outboard stations (1, 2, 8, and 9) are required for FMC. Three of four outboard stations (1, 2, 8, and 9) of which at least two are LAU-129 capable are required for PMC. For air-to-surface, all four inboard stations (3, 4, 6, and 7) are required for FMC and PMC.
15. Training missions not requiring firing of the gun on aircraft with gun system deficiencies that do not restrict flight operations report as PMC.

Attachment 25 (Added)

C-5A MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)				
WUC	**System/Subsystem**		**ARC**	**ALP**	**ARD**	**ALR**	**SO**
11A**	Windshield, Windows	X	X	X	X	X	X
11B**	Visor Door, Ramp and Loading System	X	X1		X1		X1
11F**	Aft Cargo Doors and Loading Ramp System	X		X2	X2	X2	
11H**	Aft Pressure Door System	X	X	X	X	X	X
11L**	Crew Doors, Emergency Doors (7R/L)	X	X	X	X	X	X
11N**	Service and Troop Doors	X	X3	X3	X3	X3	X3
11QAM	Access Door, Environmental Compartment	X	X	X	X	X	X
11QAR	Door Assembly, Flight Station Stairway	X					
11QAV	Door Assembly, Negative Pressure Relief	X	X	X	X	X	X
11Q**	Group V and VI, External Access Doors	X	X	X	X	X	X
11R**	Emergency Hatch Assembly (1, 2, 3L/R, 4)	X	X	X	X	X	X
11RK*	Hatch, Fwd/Aft Bilge Access and Comp	X	X	X	X	X	X
11S**	Structural Assembly; Fuselage, Wing, Empennage	X	X	X	X	X	X
11V**	Skin Grid Components	X	X	X	X	X	X
12AA*	Seat Assemblies, Pilot/Copilot/ Engineer						
12AB*	Seat Assembly, Observer	X	X	X	X	X	X
12AB*	Shoulder Harness/Take up Reel	X					
12CAG	Aircraft Cargo Winch	X	X		X		
12CA*	Guide/Restraint Rails/Mechanisms	X		X4		X4	X4
13A**	Landing Gear Assembly and Doors	X	X5	X5	X5	X5	X5
13H**	Kneeling System, Landing Gear	X	X		X		X
14***	Flight Controls	X	X	X	X	X	X
23A**	Powerplant, Turbofan, TF-39	X	X	X	X	X	X
23XA*	Engines, Instruments, EPR (Group 1 and 2)	X6	X6	X6	X6	X6	X6

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)				
			ARC	ALP	ARD	ALR	SO
23XD*	Engines, Instruments, Inlet Temperature, RPM, Fuel Flow	X7	X7	X7	X7	X7	X7
23XK*	Engines, Instruments, Oil Pressure, Oil Temperature	X	X	X	X	X	X
23Z**	Thrust Reverser System	X8					
24A**	Auxiliary Powerplant	X9	X9	X9	X9	X9	X9
41A**	Air-Conditioning, Pressurization, and Windshield Wiper System	X10	X10	X10	X10	X10	X10
42A**	DC Power Supply	X11	X11	X11	X11	X11	X11
42E**	AC Power Supply	X	X12	X12	X12	X12	X12
42G**	Emergency AC/DC Power Supply	X	X	X	X	X	X
42J**	Auxiliary AC Power System	X	X13	X13	X13	X13	X13
42L**	Electric Indicators, Transformers, Buses	X	X	X	X	X	X
44A**	External Lights	X14			X15	X15	X15
44CR*	Master Caution System	X					
45A**	Hydraulic Power System	X	X16	X16	X16	X16	X16
45J**	Hydraulic Power Transfer System	X	X	X	X	X	X
45L**	Hydraulic System, No. 1 and 4 ATM	X	X17	X17	X17	X17	X17
45P**	Hydraulic System, Instruments	X	X	X	X	X	X
46***	Fuel System	X	X18	X18	X18	X18	X18
46***	Fuel Quantity/Indicating System	X	X19	X19	X19	X19	X19
46J**	Aerial Refueling System	X			X	X	X15
46L**	Fuel Management System	X	X	X	X	X	X
47***	Oxygen System	X	X	X	X	X	X
49A**	Fire Protection/Suppression System	X	X20	X20	X20	X20	X20
51A**	Flight Instruments	X	X21	X21	X21	X21	X21
52A**	Autopilot	X					
52E**	Go-Around Attitude System	X					
52J**	Flight Augmentation Subsystem	X	X22	X22	X22	X22	X22
52N**	Limiter System	X					
52A**	MADAR/MADAR II System	X					
61***	HF/UHF/VHF Communications	X	X10	X10	X10	X10	X10
64***	Interphone	X	X	X	X	X	X
65***	IFF	X	X	X	X	X	X
66A**	Crash Data Position Indicator Recorder	X	X23	X23	X23	X23	X23
66B**	Emergency Radio, Recorders, Beacons	X					
71B**	TACAN	X	X21	X21	X21	X21	X21
71G**	Glideslope System	X	X21	X21	X21	X21	X21
71J**	VHF Navigation	X	X21	X21	X21	X21	X21

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)				
			ARC	ALP	ARD	ALR	SO
72A**	Weather Radar, AFS133	X	X24	X24	X	X	X
72G**	Radar Altimeter	X24					
72H**	Triple INS	X	X25	X25	X25	X25	X25
91A**	Emergency Equipment	X					
91B**	Emergency Equipment	X	X	X	X	X	X
97A**	Fire Extinguisher System	X	X	X	X	X	X

Legend:

ARC Airland, Rolling Cargo
ARD Airland, Rolling Cargo, Air Refueling
ALP Airland, Palletized Cargo
ALR Airland, Palletized Cargo, Air Refueling
SO Special Operations

NOTES:

1. Visor may be inoperative, but must be closed and locked. Aft loading system must be operational.
2. Aft loading system may be inoperative, but must be closed and locked. Forward loading system and landing gear kneeling system must be operable.
3. Troop compartment service door must be closed and locked.
4. Portions may be inoperative. Palletized cargo carrying capability will be restricted in the affected area.
5. Aircraft brakes may be inoperative as follows:
   5.1. Any one pair of brakes inoperative (22 brakes operative).
   5.2. Any one pair of brakes inoperative on each side of airplane (20 brakes operative).
6. Pilots and flight engineers engine pressure ratio indicators may be inoperative if the N1 is operative.
7. One operable indicator for each engine (pilots or flight engineer position).
8. Inboard thrust reversers are required for emergency descents.
9. One fully operational system required.
10. One air-conditioning pack required. Cabin pressurization must have one system (auto or manual) operable. Equipment cooling system must have one cooling fan operable.
11. One serviceable battery required.

12. Three generators required and bus tie system will be operable for an inoperative generator.
13. One auxiliary power unit generator system required.
14. Landing light required if taxi light is inoperative. Taxi light required if landing light is inoperative.
15. Air refueling slipway light required for in-flight refueling.
16. Engine-driven hydraulic pumps may have one pump on two adjacent engines inoperative if all power transfer units are operable and all pumps have positive depress capability. Hydraulic suction pumps may be inoperative if the electric suction boost pumps are operative. Electric suction boost pumps may be inoperative if the hydraulic suction pumps are operative.
17. An air turbine motor (#1 or #4) may be inoperative if the other is operable.
18. One auxiliary or one extended range (ER) tank on either wing may be inoperative. One pump per inboard auxiliary tank or one pump per ER tank may be inoperative. Center separation valve may be inoperative if the left and right air refuel valves are operational. Right/left separation valve must have appropriate crossfeed valves operable. One ground pressurized refuel system must be operational.
19. Main tank indicators are required. One auxiliary or ER tank indicator per wing may be inoperative if the symmetrically opposite indicator in the other wing is operative. All indicators required for aerial refueling.
20. Nitrogen inerting system must have a minimum of one climb and dive valve per wing operable.
21. Pilots position mach/airspeed, ADA, altimeter, vertical velocity indicators are required. Navigation instruments require one operational system and include TACAN, glideslope system, and VHF navigation.
22. Only yaw augmentation is required.
23. Only one emergency beacon transmitter is required.
24. Radar beacon mode may be inoperative. Radar altimeter requires one system to be operable.
25. One INS may be inoperative for navigation provided the attitude function and navigation selection panels are operative. Fully operational INS units will be in the number 1 and number 3 positions.

Attachment 26 (Added)

C-17 MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)			
SSSN	**System/Subsystem**		**ALA**	**ALE**	**ALT**	**AR**
2100	**AIR-CONDITIONING:**					
2120	Distribution	X1	X1	X1	X1	X1
2130	Pressurization Control	X2	X2	X2	X2	X2
2140	Heating (Cargo and Ramp Floor)	X	X	X	X	X
2150	Cooling	X	X3	X	X3	X3
2160	Temperature	X4	X4	X4	X4	X4
2190	System Control	X	X	X	X	X
2200	**AUTO FLIGHT:**					
2210	Electronic Flight Control System	X5	X5	X5	X5	X5
2218	Ground Proximity Warning System	X6	X6	X6	X6	X6
2230	Auto Throttle					
2300	**COMMUNICATIONS:**					
2310	Speech Communications	X7	X7	X7	X7	X7
2320	Data Transmission/Auto Calling	X	X	X	X	X
2330	Passenger Address	X8	X8	X8	X8	X8
2340	Intercommunications	X9	X9	X9	X9	X9
2350	Audio Integrating	X	X	X	X	X
2360	Static Discharging					
2370	Audio Monitoring	X	X	X	X	X
2380	Integrated Automatic Tuning	X	X	X	X	X
2400	**ELECTRICAL POWER:**					
2420	Alternating Current Generation	X10	X10	X10/11	X10	X10
2430	Direct Current Generation	X12	X12	X12	X12	X12
2440	External Power	X13		X13		
2450	Electrical Load Distribution	X14	X14	X14	X14	X14
2460	Emergency Generation	X	X	X	X	X
2470	Electrical Monitoring and Protection	X	X	X	X	X
2500	**EQUIPMENT AND FURNISHINGS:**					
2530	Buffet and Galley					
2540	Lavatories	X15	X15	X15	X15	X15
2560	Emergency	X	X	X	X	X
2580	Armor Protection					
2600	**FIRE PROTECTION:**					
2610	Detection	X16	X16	X16	X16	X16
2620	Extinguishing	X	X	X	X	X

SSSN	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)			
			ALA	ALE	ALT	AR
2700	**FLIGHT CONTROLS:**					
2710	Aileron	X17	X17	X17	X17	X17
2720	Rudder	X18	X18	X18	X18	X18
2730	Elevator	X19	X19	X19	X20	X19
2740	Horizontal Stabilizer	X21	X21	X21	X21	X21
2750	Flaps	X22	X22	X22	X22/23	X22
2760	Spoilers	X24	X24	X24	X24/25	X24
2780	Slats	X26	X26	X26	X26	X26
2800	**FUEL:**					
2810	Storage	X27	X27	X27	X27	X27
2820	Distribution	X28	X28	X28	X28	X28
2830	Dump	X29	X29	X29	X29	X29
2840	Indicating	X30	X30	X30	X30	X30
2850	UARRSI	X31				X31
2900	**HYDRAULIC POWER:**					
2910	Main	X32	X32	X32	X32	X32
2920	Auxiliary	X33	X33	X33	X33	X33
2930	Indicating	X34	X34	X34	X34	X34
3000	**ICE AND RAIN PROTECTION:**					
3010	Airfoil	X				
3020	Air Intakes	X				
3030	Air Data Sensor Heat Cont/Monitor	X	X35	X35	X35	X35
3040	Windows and Windshields	X	X	X	X	X
3080	Detection	X				
3100	**INDICATING AND RECORDING SYSTEMS:**					
3130	Recorders	X36				
3140	Central Computers	X37	X37	X37	X37	X37
3150	Central Warning Systems	X	X	X	X	X
3160	Central Display Systems	X38	X38	X38	X38	X38
3200	**LANDING GEAR:**					
3210	Main Gear	X	X	X	X	X
3220	Nose Gear	X	X	X	X	X
3230	Extension and Retraction	X	X	X	X	X
3240	Wheels and Brakes	X	X39	X39	X39	X39
3246	Brake Temperature	X	X40	X40	X40	X40
3250	Steering	X	X41	X41	X41	X41
3260	Position and Warning	X	X	X	X	X
3300	**LIGHTS:**					
3310	Flight Compartment	X				
3320	Crew Rest Area	X				

SSSN	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)			
			ALA	ALE	ALT	AR
3330	Cargo and Service Compartments	X42	X42	X42	X42/43	X42
3340	Exterior	X44	X44	X44	X44	X44
3350	Emergency Lighting	X	X	X	X	X
3360	Refuel Lighting	X		X		X
3400	**NAVIGATION:**					
3410	Flight Environment Data	X45	X45	X45	X45	X45
3420	Attitude and Direction	X46	X47	X47	X48	X46
3441	Weather Radar	X	X49	X49	X49	X49
3442	Radar Altimeter	X50	X50	X50	X50	X50
3443	Inertial Reference	X	X51	X51	X51	X51
3446	Station Keeping Equipment	X52	X52	X52	X52	
3450	Dependent Position Determing	X53,54	X54	X54	X54	X53,54
3453	TACAN	X				X55
3457	Global Positioning System	X			X	
3460	Position Computing (MSN Comp)	X56	X56	X56	X56	X56
3500	**OXYGEN:**					
3510	Crew	X57	X57	X57	X57	X57
3520	Passenger and Auxiliary	X58	X58	X58	X58	X58
3530	Portable	X59	X59	X59	X59	X59
3600	**PNEUMATIC:**					
3610	Distribution	X60	X60	X60	X60	X60
3620	Indicating	X61	X61	X61	X61	X61
3800	**WATER AND WASTE:**					
3810	Potable Water					
3830	Waste Disposal					
3840	Air Supply					
4100	**CARGO HANDLING AND MSN SYSTEMS:**					
4130	Aerial Delivery-Cargo	X			X	
4140	Aerial Delivery-Personnel	X			X	
4160	Aeromed System	X		X		
4170	Seats	X	X	X	X	X
4700	**OBIGGS:**	X62				
4710	Generation and Storage	X63	X63	X63	X63	
4720	Distribution and Control	X				
4740	Indication	X				
4900	**AUXILIARY POWER UNIT:**					
4910	Power Plant	X64				
5200	**DOORS:**					
5211	Crew Entrance	X	X	X	X	X
5220	Emergency Exit	X	X	X	X	X

SSSN	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)			
			ALA	ALE	ALT	AR
5230	Cargo/Ramp	X	X	X	X65	X
5240	Service	X	X	X	X	X
5270	Door Warning	X66	X66	X66	X66	X66
5280	Landing Gear	X	X	X	X	X
5600	**WINDOWS:**					
5610	Windshields	X	X	X	X	X
7200	**ENGINE:**					
7200	Engine Assembly	X	X	X	X	X
7300	**ENGINE FUEL:**					
7310	Distribution	X	X	X	X	X
7320	Controlling	X67	X67	X67	X67	X67
7330	Indicating	X	X	X	X	X
7400	**ENGINE IGNITION:**					
7410	Electrical Power Supply	X68	X68	X68	X68	X68
7500	**ENGINE AIR:**					
7520	Distribution (Comp/Turbine Cooling)	X	X	X	X	X
7530	Variable Stator Vanes	X	X	X	X	X
7600	**ENGINE CONTROLS:**					
7610	Power Control	X69	X69	X69	X69	X69
7620	Emergency Shutdown	X	X	X	X	X
7700	**ENGINE INDICATING:**					
7710	Power	X	X	X	X	X
7720	Temperature	X	X	X	X	X
7740	Integrated Engine Instrument System	X	X	X	X	X
7800	**ENGINE EXHAUST:**					
7830	Thrust Reversers	X	X70	X70	X70	X70
7900	**ENGINE OIL:**					
7910	Storage	X	X	X	X	X
7920	Distribution	X	X	X	X	X
7930	Indicating	X71	X71	X71	X71	X71
8000	**ENGINE STARTING:**					
8010	Starting	X72	X72	X72	X72	X72
9300	**TACTICAL ELECTRONIC WARFARE:**	X73				
9310	Missile Warning and Sensing System	X				
9500	**CREW ESCAPE AND SAFETY:**					
9520	Escape Hatches	X74	X74	X74	X74	X74
9523	Flotation Equipment Deployment (FED)	X74	X74	X74	X74	X74
9530	Ramp Escape	X74		X74		

Legend:

ALA Airlift, Airland
ALE Airlift, Evacuation
ALT Airlift, Tactical
AR Air Refueling

NOTES:

1. Cargo Compartment recirculation fan (2122BB001) required if one refrigeration unit is inoperative. Two of three avionics cooling fans (2126BB001-003) must be operational. Two of three positive pressure relief valves (2134FV001-003) must be operational. Two of three negative pressure relief valves (2134FV004-006) must be operational.
2. One complete pressurization system (2131) must be operational. Two of three indicators in cabin pressure indicator unit (2133PL001,600,601) must be operational.
3. One of two refrigeration units (2153AA001,002) must be operational. No ram air ventilation valves (2155FV001,002) required if both refrigeration units are operational. One or two ram air inlet doors (2155AA005,006) may be inoperative if secured open.
4. Remote temp control switch (2167SW) may be inoperative if the loadmaster's temp control is operational.
5. Three of four flight control computers (2211CM001-004) must be operational. **(Positions 1 and 4 must have operational flight control computers installed.)** Flyable exceptions to preflight BIT failures are contained in T.O. 1C-174-2-22F1-00.
6. One of two stick shakers (2118BB) must be operational. Ground proximity warning system (2218) required for low-level flight.
7. UHF backup radio control set (2313CT) required if one CNC or CCU is inoperative. One of two VHF receiver-transmitters (2312TS) must be operational. One of two UHF receiver-transmitters (2313TS001,002) must be operational. **(ARC-187 required**)
8. One of three public address control sets (2331CT) must be operational. No three adjacent public address speakers (2331LS) may be inoperative.
9. Pilot, copilot, forward loadmaster, and aft loadmaster's intercom control sets of seven total (2341CT) must be operational.
10. Three of four AC generator systems (2421) must be operational.
11. 60hz power supply system (2426) must be operational. **(ALE only)**
12. Three of four transformer rectifiers (2431PS001-004) must be operational.
13. Required if APU is inoperative.
14. One of two instrument power transformers (2451TF001-002) must be operational. **(Operative transformer must be installed on bus 3.)**

15. Suitable latrine facilities for all crewmembers must be provided.
16. One of two fire loops per engine (A or B) (2611) must be operational. Six of 14 cargo compartment smoke detectors (2613AS001-014) must be operational in locations 9, 10, 13, and 14 plus two other locations. One of two avionics smoke detectors (2617AS001-002) must be operational. One of two avionics smoke detectors (2617AS003-004) must be operational. One of two avionics smoke detectors (2617AS005-006) must be operational.
17. One of two actuators (2713HP001-004) per surface must be operational.
18. Upper rudder IFCM (2723FV001) may be inoperative. One rudder actuator (2723HP001-004) per surface may be inoperative. **(All rudder IFCM and rudder actuators must be operational for SAAF operations.)**
19. One of four elevator IFCMs (2733FV001-004) may be inoperative if surface is in neutral or float position. Two of eight elevator actuators (2733HP001-004) may be inoperative.
20. One of four elevator IFCMs (2733FV001-004) maybe inoperative if surface is in neutral or float position. Two of eight elevator actuators (2733HP001-008) may be inoperative (but cannot be failed in the same surface)--applies to SAAF operations only.
21. One of two horizontal stab trim control valves (2743FV001) may be inoperative if opposite trim motor is operational. One of two horizontal stab pitch trim motors (hydraulic) (2744AA001A,001B) may be inoperative if opposite control valve is operational. Pitch trim indicator (2745MN001) may be inoperative if MFD indicator is operative.
22. One of eight flap actuators (2752HP001-008) may be inoperative. One channel per module for each of four flap tandem control valves (2752FV0001-004) may be inoperative. Flap position indicator (2753MN001) may be inoperative if MFD indication is operative. **3/4 flap restrictions apply.**
23. All eight flap actuators (2752HP001-008) must be operational for SAAF operations. All four flap tandem control valves (2752FV0001-004) must be operational for SAAF operations.
24. One of four spoiler panel actuators per wing (2764HP001-009) may be inoperative. Speed brake indicator (2765MN001) may be inoperative if MFD indicator is operative.
25. All four spoiler panel actuators per wing (2764HP001-009) must be operational for SAAF operations.
26. One of eight slat actuators per wing (2782HP001-016) may be inoperative.
27. Center separation valve (2813FV001) may be inoperative if both air refuel isolation valves are operational. One element (primary, secondary, override solenoid) of the climb and dive valve system (2812FV) may be inoperative per wing.
28. One of two ground refuel receptacles (2821AA001,002) may be inoperative. One boost pump per wing may be inoperative if inboard transfer pumps and crossfeed valves are operational.
29. One of two fuel jettison isolation valves (2831FV001,002) and the center separation valve must be operational.
30. Of 48 fuel tank quantity probes (2841AS005-052), 1 per tank may be inoperative. One of two channels (A or B) of fuel quantity computer (2841CM001) must be operational. One of four fuel quantity display units (2841DD002-005) may be inoperative if total fuel quantity indicator is

operational. One of four fuel boost pump low pressure switches per wing (284SW) may be inoperative if inboard transfer pumps and crossfeed valves are operational.

31. One of two air refuel isolation valves (2851FV001-002) may be inoperative if center separation valve is operational.
32. Six of eight engine driven hydraulic pumps (2911FP001-008) must be operational. **(Only one pump per system may be inoperative, only one pump can be inoperative between system 2 and 3, and AC motor pump for affected system and power transfer pump must be operational.)**
33. Reversible hydraulic motor pump (2922FP001) may be inoperative if #2 and #3 system engine-driven hydraulic pumps and or auxiliary pumps are operational.
34. One of four hydraulic manifold pressure transducers (2931AS001-004) may be inoperative if associated pump low pressure light and temperature indicators are operational. Four of four hydraulic reservoir liquid quantity transducers (2932AS001-004) may be inoperative if associated system low quantity proximity sensor is operational. Four of four hydraulic reservoir low quantity proximity sensors (2932SW001-004) may be inoperative if associated system reservoir liquid quantity transducer is operational.
35. Air data sensor heat control/monitoring system must be operational for all missions scheduled to transit RVSM airspace.
36. ELT, CVR, and SFDR should be operational for all home station departures.
37. One of two propulsion data management computers (3141CM001-002) may be inoperative.
38. One of four multifunction displays (3161AA001-004) may be inoperative if one heads-up display is operational. Two of four multifunction displays (3161AA001-004) may be inoperative if two heads-up displays are operational. For formation flight, four multifunction displays (3161AA001-004) plus one heads-up display or three multifunction displays plus two heads-up displays must be operational. One of two multifunction control panels (3161CT001-002) may be inoperative.
39. One of 12 main landing gear multidisk brakes (3243MB001-012) may be inoperative.
40. One brake temperature indicator sensor per bogie may be inoperative. **(See SSSN 3240, Note 39, for operational brake requirements.)**
41. One of two nose landing gear steering cylinder assemblies (3251HP001-002) may be inoperative. **Both must be operational for SAAF operations.**
42. Sixteen white incandescent cargo compartment lights required for cold weather operations.
43. Sixteen red incandescent cargo compartment lights required for tactical missions.
44. One wingtip (3341AA001-002) or fuselage (3342DS001-002) landing and taxi light on each side must be operational. One of two nose taxi and landing lights (3342AA001-002) may be inoperative if the wingtip landing and taxi light on the same side are operational. One of two fuselage landing and taxi lights (3342DS001-002) may be inoperative if the nose taxi and landing light on the same side are operational. One of two anticollision beacon lights (3345AA001-002) may be inoperative.

45. One of four pitot-static probes (3411AS001-004) may be inoperative. **Upper left and lower right probes must be operational.** Either pilot or copilot must have a full set of standby indicators. One channel (A or B) in one of two air data computers (3416CM001-002) may be inoperative.
46. One of two bearing distance heading indicators (3421MM001,002) may be inoperative. Zero of two head-up displays (3425AA001,002) required if four multifunction displays are operational.
47. One of two bearing distance heading indicators (3421MM001,002) may be inoperative. Zero of two head-up displays (3425AA001,002) required.
48. One of two bearing distance heading indicators (3421MM001,002) may be inoperative. One of two head-up displays (3425AA001,002) required for low-level flight or SAAF landings.
49. Weather radar required if flying into known or forecasted storms.
50. One of two radar altimeters (3442) may be inoperative.
51. One of four inertial reference units (3443AA001-004) may be inoperative.
52. Required for formation flying training.
53. TACAN receiver transmitter (3453TS001) required for air refuel missions only.
54. Identification friend or foe (IFF) must be operational for all missions scheduled to transit reduced verticle separation minimum (RVSM) airspace.
55. If TACAN is inoperative, radar beacon must be operational.
56. Two of four mission computer display units (3462AA001-004) may be inoperative. One of three mission computers (3462CM001-003) may be inoperative.
57. Twenty-five liter crew LOX converter (3511FR001) may be inoperative if auxiliary system and crossfeed are operational. Seven of 10 oxygen diluter demand regulators (3512FW001-009,011) may be inoperative if operational units are installed in the 3 primary crew positions. Five of eight folding oxygen mask assemblies (3513MP003-010) may be inoperative if operational units are installed in the three primary crew positions.
58. Seventy-five liter passenger LOX converter (3521FR001) may be inoperative if auxiliary system is operational. Seventy-five liter auxiliary LOX converter (3521FR003) may be inoperative if passenger system is operational.
59. Three of six portable oxygen quick-don masks (3531MP004-012,016,020,024) may be inoperative. Six of nine portable oxygen cylinder and regulators (3531AA001-009) may be inoperative. **(One must be operational for each crewmember.)**
60. One engine bleed air supply system (3611) per wing may be inoperative. **(Restricted from flight into known icing conditions.)** Center wing isolation valve (3615FV001) may be inoperative if valve can be manually closed after engine start. **(Two bleed air sources will be required for each operational AC refrigeration unit.)**
61. One of two manifold failure detector channels (A or B) (3623) may be inoperative. Two of four wing ice protection burst duct differential pressure switches (3623SW001-004) may be inoperative. **(One per wing must be operational.)** Four of eight cowl ice protection burst duct differential pressure switches (3623SW005-012) may be inoperative. **(One per engine must be operational.)**

62. System deactivated for training.
63. OBIGGS required for combat operation only (FSL). Minimum of one half of the OBIGGS must be operational for combat operations (ALA, ALE, ALT).
64. Required if external power is inoperative.
65. All cargo door and ramp ditching locks must be operational (electrical mode) for airdrop missions.
66. The following proximity indicating systems may be inoperative if the door is visually verified closed and locked: crew door (5271AS001); cargo door (5272AS001); emergency exit (5273AS001); horizontal stabilizer access door (5274AS006); ramp (5275AS001); crew oxygen door (5274AS001); belly maintenance hatch (5274AS004); and vertical stabilizer access hatch (5274AS005).
67. Four of four electronic engine controls must be operational. Each has two channels (A and B); **one channel on each must be operative, engine will operate in N1 mode.**
68. Channel B of each engine ignition system (7411) may be inoperative. **(Channel A must be operational.)**
69. Throttle friction adjustment clutch (7611AA006) may be inoperative. **(Must be failed with clutch disengaged.)**
70. Four of four engine core or fan thrust reversers (7830) may be inoperative. **(Inoperative thrust reversers must be locked out in symmetrical pairs.) All thrust reversers must be operational for SAAF operations.**
71. Four of four oil quantity transmitters (7931AS001-004) may be inoperative. **(Oil pressure indication and temp indication must be operational.)** Four of four oil pressure switches (7934SW001-004) may be inoperative. **(Oil pressure indication must be operative.)**
72. Four of four starter control valves (8011FV001-004) may be inoperative. **(Start valves must be operated manually.)**
73. System deactivated for training.
74. See **Table A26.1.**

Table A26.1. Crew Escape and Safety Emergency Equipment.

ITEM	A Emergency Equipment	B Installed	C Required Home Station Launch	D Training Missions	E En Route (Major)	F En Route Without C-17 MX
1	FEDS Hatches	4	4	2 (note 1)	2 (note 1)	2 (note 1)
2	FEDS Liferafts (includes Retractor Assembly and Ladders)	3	3 (note 2)	0 (note 3)	2 (note 3)	2 (note 3)
3	FEDS Initiators	7	7	6 (note 4)	6 (note 4)	6 (note 4)
4	Fire Extinguishers	9	9	9	9	8
5	Crash Axes	2	2	2	2	2
6	Ramp Blow Down System	1	1	0 (note 5)	0 (note 5)	0 (note 5)

NOTES:

1. Four operational hatches required for any flight that exceeds power off gliding distance from land.
2. Liferafts must be installed.
3. Raft quantity adequate to accommodate total persons on board (46 per raft) when flight exceeds power off gliding distance from land.
4. All required for flights exceeding power off gliding distance from land. Exterior initiator is required at all times.
5. Required for aeromed evacuation.

Attachment 27 (Added)

KC-135R MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)		
WUC	**System/Subsystem**		**CFI**	**CCT**	**ALR**
11***	Airframe	X	X	X	X
12***	Fuselage Compartments	X			X1
13***	Landing Gear	X	X	X	X
14***	Flight Controls	X	X	X	X
24B/C/D	Auxiliary Power Unit (Turbo Mach)	X			X2
27***	Engines	X	X	X	X
41***	Environmental Control	X	X3	X3	X3
42***	Electrical Power	X	X	X	X
441**	Interior Lighting	X	X4	X4	X4
442**	Exterior Lighting	X	X	X	X
45***	Hydraulic/Pneudraulic Power Supply	X	X	X	X
46***	Fuel Systems	X	X	X	X
467**	Air Refueling Off-Load	X	X4	X4	X
47***	Oxygen System	X	X5	X5	X
49***	Miscellaneous Utilities	X	X5	X5	X5
51A**	Flight Director	X	X	X	X
51B**	Rotation Go-Around System	X	X	X	X
51D**	Central Air Data System	X	X	X	X
51E**	Fuel Saving Advisory/Cockpit Advisory System	X	X4/6	X4/6	X
511**	Flight Instruments	X	X	X	X
5121*	Sextant/Mount	X	X4	X4	X
5131*	Engine Instruments	X	X7	X7	X7
514**	Landing Gear/Flap Indicating System	X	X	X	X
515**	Fuel Quantity System	X	X6	X6	X6
516**	Hydraulic Indicating System	X	X	X	X
517**	Electrical System Indicators	X	X	X	X
518**	Utility Instrumentation	X	X	X	X
519**	In-flight Refueling Instrumentation	X	X4	X4	X
52***	Autopilot	X	X4/8	X4/8	X
522**	Flight Control Augmenter System	X	X	X	X
5241*	N-1 Compass	X	X	X	X
5242*	J-4 Compass	X	X	X	X
61***	HF Communications	X	X9	X9	X
62***	VHF Communications	X	X10	X10	X
63***	UHF Communications	X	X11	X11	X
64***	Interphone	X	X5	X5	X

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)		
			CFI	CCT	ALR
65***	IFF	X	X12	X12	X
71B**	VOR	X	X	X	X
71Z**	TACAN	X	X	X	X
72C**	Rendezvous Equipment	X	X4	X4	X4
72Y**	Carousel Inertial Navigation System (INS)	X	X4/13	X4/13	X
72Z**	Search Radar	X	X4/14	X4/14	X
721**	APN-218 Doppler	X	X	X	X
721**	Doppler Navigation (DNS)	X	X13	X13	X

Legend:

ALR Airlift, Air Refueling

CCT Combat Crew Training

CFI Central Flight Instructor

NOTES:

1. Thermal curtains required.
2. Provide air and electrical power for engine start.
3. Normal air-conditioning or alternate pressurization operable. Automatic or manual temperature control; window and engine anti-ice protection available.
4. If mission requires.
5. Operational at all primary crew positions, to include instructor pilot and instructor boom operator.
6. Accurate fuel quantity indication required.
7. Sufficient to monitor engine operations. Analog or digital required.
8. Not required for traffic pattern ride only.
9. Required for overwater missions.
10. Not required if both UHF systems are operational.
11. Only one UHF system is required if the VHF system is operational.
12. Mode 3 and 3C required at all times.
13. Either INS or DNS needed for mission requirements.
14. One operational scope required for traffic pattern; both required for cell missions.

Attachment 28 (Added)

C-141B MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**ALA**	**ADA**	**ADP**	**ADR**	**ALM**	**SO**
11AA*	Windshields and Windows	X	X	X	X	X	X	X
11C**	Doors, Mechanical and Electrical	X	X	X	X1	X2	X	X
11C**	Emergency Door, Hatches and Exits	X	X	X	X	X	X	X
11FAH	Pressure Diaphragm	X	X	X	X	X	X	X
11FA*	Radome and Latches	X	X	X	X	X	X	X
11FDC	Tail Cone Assembly	X	X	X	X	X	X	X
11F**	Aerial Refueling Fairing	X	X	X	X	X	X	X
12B**	Flight Station Furnishings	X	X3	X3	X3	X3	X3	X3
12C**	Winches, Cables, Guides	X	X	X	X	X		X
12CAQ	Roller Conveyor Assembly	X	X	X		X		X
12D**	Stab Jack System	X	X	X	X	X	X	X
12E**	Aerial Delivery System	X		X	X	X		X
12FAO	Seat Kit Side Wall	X	X	X	X	X	X	X
12FB*	Paratroop Kit	X		X	X			X
12FD*	Litter Provision Kit	X					X	
13***	Landing Gear	X	X4	X4	X4	X4	X4	X4
14***	Flight Controls	X	X5	X5	X5	X5	X5	X5
23***	Turbofan Powerplant, TF-33	X	X6	X6	X6	X6	X6	X6
24***	Auxiliary Powerplant	X	X7	X7	X	X	X	X
41***	Air-Conditioning, Pressurization	X	X8	X8	X8	X8	X	X
42A**	Electrical Power, DC	X	X	X	X	X	X	X
42D**	Electrical Power, AC	X	X9	X9	X9	X9	X9	X9
42G**	Emergency Power System, AC/DC	X	X	X	X	X	X	X
44AA*	Lighting, Internal	X		X	X	X	X	
44AA*	Lighting, External	X	X10	X10	X10	X10	X10	X10
45A**	Hydraulic Systems 1, 2, and 3	X	X	X	X	X	X	X
46A**	Fuel System	X	X11	X11	X11	X11	X11	X11
47A**	Oxygen System	X	X	X	X	X12	X	X
49A**	Fire/Overheat, Extinguisher System	X	X	X	X	X	X	X

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)					
			ALA	ADA	ADP	ADR	ALM	SO
51AA*	Central Air Data Computer System	X	X	X	X	X	X	X
51BA*	Pitot Static System	X	X	X	X	X	X	X
51B**	Flight Director System	X	X13	X13	X13	X13	X13	X13
51BHA	Altimeter, Pressure	X	X13	X13	X13	X13	X13	X13
51C**	Airborne Flight Recorder	X					X	
51E**	Fuel Savings Advisory System	X						X14
52***	Automatic Flight Control System	X						X
55B**	Flight Data Recorder	X	X15					
55C**	Cockpit Voice Recorder	X15						
56DG*	Test Program Logic Computer	X	X	X	X	X	X	X
61B**	SECURE VOICE	X						
61***	UHF/VHF Radios	X	X13	X13	X13	X13	X13	X13
64A**	Intercom/Interphone System	X	X	X	X	X	X	X
65***	IFF	X	X	X	X	X	X	X
66***	Emergency Communication System	X						X
71D**	VHF Navigation System	X	X13	X13	X13	X13	X13	X13
71Z**	TACAN, AN/ARN-118	X	X13	X13	X13	X13	X13	X13
72K**	APS-133 System	X	X	X	X	X	X	X
73A**	APN-169B Station-Keeping Equipment	X		X	X	X		X
91***	Emergency Equipment	X	X	X	X	X	X	X
97***	Explosive Devices and Components	X	X	X	X	X	X	X

Legend:

ADA Aerial Delivery, Cargo
ADP Aerial Delivery, Personnel
ADR Aerial Delivery
ALA Airlift, Airland
ALM Airlift Evacuation, Medical
SO Special Operations

NOTES:

1. Cargo doors may be inoperative.
2. Troop doors may be inoperative.
3. Except work unit codes 12BAY and 12BAZ.
4. Home station departures must have all working. While off station, one brake per landing gear may be deactivated.
5. Aircraft commander, initial aircraft commander, instructor IP and AR ride must have all working. While off station, aileron trim system (WUC 14B**), rudder trim indicator (WUC 14DBA), and wing spoiler system (WUC 14H**) may be inoperative.
6. Three constant speed drives/generators must be operative; one each N2, EGT, fuel flow indicators is required.
7. Not required for aerial refueling.
8. Left air-conditioning pack must be operative.
9. Three generators required.
10. Taxi lights can be inoperative if landing lights are operable. Landing lights may be inoperative if taxi lights are operable.
11. Aerial refueling mission must have all pumps and gauges working. One extended range pump on either wing may be inoperative on other missions.
12. Cargo compartment oxygen is not required.
13. All student training missions must have all working. HF radios are not required for student training. While off station, one required.
14. If inoperative, the FSAS CDU must be replaced with an INS CDU.
15. MCI 11-241, Volume 4, *C-141 Operations-Minimum Equipment List (MEL) and Aircraft Operating Restrictions*, Table A2.8.
16. One may be operative for navigation, provided the attitude function and navigation selection panels are operative. The fully operational INS will be installed in the number 1 position.

Attachment 29 (Added)

C-130E/H MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)			
WUC	**System/Subsystem**		**ALC**	**AAD**	**PRO**	**OWM**
11***	Windshield and Windows	X	X	X	X	X
112**	Air Deflector Door	X		X		
113**	Crew/Paratroop Door	X	X	X	X	X
114**	Fuselage	X	X	X	X	X
115**	Wings and Nacelles	X	X	X	X	X
116**	Empennage	X	X	X	X	X
125**	Forward/Center/Aft Cargo	X	X	X	X	X
126**	Aerial Delivery System (ADS)	X		X		
128**	Dual Rail Cargo Handling Kit	X	X	X		X
13***	Landing Gear	X	X	X	X	X
14***	Flight Controls	X	X	X	X	X
145**	Control Surface Position Indicator	X			X	
22***	Turboprop Power Plant	X1	X1	X1	X1	X1
24***	Auxiliary Power Unit (APU) (74+ H Models)	X	X	X	X	X
241**	Gas Turbine Compressor (GTC)	X				
242**	Air Turbine Motor (ATM)	X	X	X	X	X
243AA	ATM Cooling Fan	X				
32***	Hyd Propeller	X	X2	X2	X2	X2
41LAO	AC-Flt Compartment (74+ H Models)	X3		X3	X3	
41RAO	AC-Cargo Compartment (74+ H Models)	X3		X3	X3	
411**	AC-Flt Compartment	X3		X3/4	X3/4	
412**	AC-Cargo Compartment	X3	X3/4	X3/4	X3/4	X4
413**	Pressurization	X	X	X	X	X
414**	Bleed Air System	X	X	X	X	X
415**	Anti-Ice/De-Ice Systems	X	X	X	X	X
418**	Instruments	X	X	X	X	X
419**	Under Floor Heat (74+ H Models)	X3		X3		X3
42***	Electrical Power Supply AC/DC	X	X	X	X	X
4411*	Nav Lights	X5	X5	X5	X5	X5
4412*	Landing Lights	X3/5	X3/5	X3/5	X3/5	X3/5
4413*	Anti-Collision Lights	X5	X5	X5	X5	X5
4414*	Taxi Lights	X3/5			X3/6	
4415*	Leading Edge Lights	X3/5			X3/6	
4416*	Formation Lights	X3/5		X3/5	X3/6	
4424*	Pedestal/Pilot Side Panel Lights	X	X6	X6	X6	X6
4427*	Panel Lights	X	X6	X6	X6	X6

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)			
			ALC	AAD	PRO	OWM
4428*	Warning Lights	X	X	X	X	X
443**	Emergency Exit Lights (Impact)	X	X	X	X	X
45***	Hydraulic and Pneumatic Power Supply	X	X	X	X	X
46***	Fuel Tanks	X7	X7	X7	X7	X7
46314	SPR Dual Level Control	X				
466**	Instruments, Fuel System	X	X8	X8	X8	X8
47***	Oxygen System	X	X	X	X	X
49***	Miscellaneous Utilities	X	X	X	X	X
495**	Windshield Wipers	X9	X9	X9	X	X9
49611	Bell, Personnel Warning	X	X	X	X	X
51HAA	Caution Advisory Panel (90+ H Models)	X	X	X	X	X
51HAB	Pilot/Co-Pilot Warning Panel (90+ H Models)	X	X	X	X	X
51HAC	Pilot Mode Advisory Panel (90+ H Models)	X	X	X	X	X
51J**	Ground Collision Avoidance System (90+ H Models and Modified E Models)	X	X	X	X	
51XC*	Sextant (Only for Training With GPS Installed)	X	X10	X10		X10
5111*	Pitot Static	X	X	X	X	X
51113	TCAS Vertical Speed indicator (93+ H Models)	X	X	X	X	X
51118	TAS Computer	X	X	X	X	X
5112*	Turn and Slip Indicating System	X	X	X	X	X
5113A	Standby ADI (90+ H Models)	X	X	X	X	X
5113*	Attitude Indicating System	X	X	X	X	X
5114*	Navigation Instruments	X	X	X	X	X
512**	FS109 Flight Director (73+ H Models)	X	X	X	X	X
513**	TAS	X	X	X	X	X
515**	MA-1 Flight Director System	X	X	X	X	X
517**	Electrical Group "A"	X	X	X	X	X
518**	AF Standard Flt Director System	X	X	X	X	X
519**	Standby Compass System	X	X	X	X	X
521**	B-4 Auto Pilot	X	X			X
522**	N-1 Compass System	X	X11	X11	X11	X11
523**	C-12 Compass System	X	X11	X11	X11	X11
524**	CADC (AWADS E Models)	X	X	X	X	X
526DA	EFIS (90+ H Models)	X	X	X	X	X
526**	FCS-105 Auto Pilot (73+ H Models)	X	X	X		X
56A**	Cockpit Voice Recorder	X3	X3	X3	X3	X3
56B**	Flight Data Recorder	X	X3	X3	X3	X3
615**	HF (AN/ARC-190)	X	X12	X12		X12

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)			
			ALC	AAD	PRO	OWM
62X**	VHF (AF/ARC-186)	X	X12	X12	X12	X12
63A**	UHF (AN/ARC-164)	X	X12	X12	X13	X12
63M**	UHF (ARC-164) Have Quick II	X	X12	X12	X12	X12
641**	Intercom System - General	X	X14	X14	X14	X14
642**	Intercom (AF/AIC-18A)	X	X	X	X	X
644**	Intercom (AN/AIC-25)	X	X	X	X	X
65JA*	IFF System (APX-100) (90+H Models)	X	X	X	X	X
65***	IFF System (APX-72)	X	X	X	X	X
66***	Emergency Communications/ELT	X	X	X	X	X
663**	Underwater Acquistic Locator System	X3				X3
68B**	SATCOM (URC-108)	X				
6921*	UHF Direction Finder (AN/ARA-25)	X	X12	X12		X12
6923*	UHF Direction Finder (AN/ARA-50)	X	X12	X12		X12
69250	UHF/VHF DF301B Direction Finder	X	X12	X12		X12
696**	KY-58 Secure Voice	X	X12	X12		X12
697**	KY-75 Secure Voice	X	X12	X12		X12
71A**	ADF	X	X			
71AC*	Radio Compass (AN/ARN-149)	X	X			
71C**	VOR/ILS/MB (AN/ARN-147)	X12	X12	X12	X12	X12
71E**	GPS	X3		X3/15	X3/15	X3/15
71GA*	IDCU	X	X16	X16	X16	X16
71GB*	BICU	X	X	X	X	X
71GE*	RLG INU	X17	X17	X17	X17	X17
71J**	Microwave Landing System	X				
71KD*	HSI Interface (90+ H Models)	X	X	X	X	X
712**	TACAN (AN/ARN-118)	X12	X12	X12	X12	X12
711**	Radio Compass (AN/ARN-6)	X				
71113	BDHI	X				
72K**	Low Power Color Radar (AN/APN-24) (92+ H Models)	X				X
72R**	Multimode Radar (AN APO-175) (AWADS E Models)	X				X
72X**	Freon Press System (AWADS E Models)	X				X
721**	Doppler Velocity Sensor (AN/ARN-218)	X				X
7217*	CARA (AN APN-232)	X	X	X	X	X
7232*	Waveguide Pressurization System	X				X
727A*	Search Radar (AN/APN-59F)	X			X18	X
728**	Radar (AN/APN-59E/F)	X				X
729**	SKE (AN/APN-169C(V))	X		X19		X19
76A**	Flare/Chaff Dispenser (AN/ALE-40)	X	X20	X20	X20	X20
76B**	Radar Warning Receiver (AN/ALR-69)	X	X20	X20	X20	X20

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)			
			ALC	AAD	PRO	OWM
76J**	Missile Warning (AN/AAR-47)	X	X20	X20	X20	X20
76N**	Flare/Chaff Dispenser (AN/ALE-47)	X	X20	X20	X20	X20
76R**	IR Countermeasures (AN/ALQ-157)	X	X20	X20	X20	X20
91113	Escape Rope	X	X	X	X	X
91213	Life Raft (Type F-2)	X				X

Legend:

AAD Aerial Delivery
ALC Airlift Cargo
OWM Overwater Mission
PRO Pilot Proficiency (FTU Only)

NOTES:

1. WUC 22DBF datum amplifier, 22EBD temp datum amplifier, 22EBH low speed idle solenoid, 22GF0 oil cooler door position indication, and 22GG0 oil quantity indication may be inoperative.
2. WUC 32532 solid state synchrophaser may be inoperative.
3. Required as per AFI 11-2C-130, Volume 3.
4. Manual mode required for PMC.
5. As per AFI 11-202, Volume 3, *General Flight Rules*, and AETC Supplement 1.
6. Required for night flight.
7. WUC 46212 auxiliary tank boost pumps, and 46213 pylon tank boost pumps may be inoperative.
8. Fuel tank quantity indication allowed to be inoperative provided fuel quantity is verified: both auxiliary tanks, one external tank, two nonisometrical main tanks.
9. Pilot's side only.
10. One required on SCNS aircraft for FMC.
11. One required with operational GPS installed.
12. One required.
13. Number 1 UHF manual control head required.
14. WUC 64120 AN/ARC-13 public address system is not required.
15. Required for transporting passengers.
16. Two required.
17. Two required for 90+ H models.

18. Required for flights departing the local radar pattern.
19. Multiship formations only.
20. If installed, required for hostile environment operations.

Attachment 30 (Added)

MC-130P MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**SAR**	**NVG**	**AR**	**Ferry**	**AAD**	**OWM**
11***	Windshield and Windows	X	X	X	X	X	X	X
112**	Aft Cargo Ramp and Door	X	X	X	X	X	X	X
1129*	Air Deflector Door	X	X1	X1	X1	X1	X1	X1
113**	Crew and Paratroop Doors, Emergency Doors, Hatches, Exits	X	X	X	X	X	X2	X
114**	Fuselage, Wings, Nacelles, Empennage	X	X	X	X	X	X	X
122**	Flight Deck	X	X	X	X	X	X	X
123**	Forward, Center, Aft Cargo	X	X	X	X	X	X	X
126**	Aerial Delivery System	X					X	
13***	Landing Gear System	X	X	X	X	X	X	X
14***	Flight Controls	X	X	X	X	X	X	X
22***	Turbo Prop Powerplant	X	X3	X3	X3	X3	X3	X3
24***	Gas Turbine Compressor	X	X	X4	X4	X4	X4	X4
242**	Air Turbine Motor, Cooling Fan	X	X	X	X	X	X	X
32***	Hydraulic Propeller	X	X	X	X	X	X	X
41***	Air-Conditioning and Pressurization	X	X	X5	X5		X5	X
414**	Bleed Air, Anti-Ice/De-Ice System	X	X6	X6	X6		X6	X6
4151*	Propeller Anti-icing and Deicing	X	X	X	X	X	X	X
42***	Electrical Power Supply, AC	X	X	X	X	X	X	X
42***	Electrical Power Supply, DC	X	X	X	X	X	X	X
441**	External Lighting	X	X7	X7	X7	X7	X7	X7
442**	Internal Lighting	X	X	X	X	X	X	X
451**	Hydraulic System	X	X	X	X	X	X	X
461**	Fuel System	X7	X8	X8	X8	X8	X8	X8
467**	Aerial Refuel System	X	X		X			
472**	Liquid/Gaseous Oxygen System	X	X1	X1	X1	X1	X1	X1

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)					
			SAR	NVG	AR	Ferry	AAD	OWM
491**	Fire/Overheat and Extinguisher System	X	X	X	X	X	X	X
495**	Windshield Wiper	X	X	X	X	X	X	X
496**	Personnel Warning Bell	X	X	X	X	X	X	X
51X**	Sextant and Mount	X						X
51***	Instruments	X	X	X	X	X	X	X
51151	Free Air Temperature Indicator	X						
519**	Standby Compass System	X	X	X	X	X	X	X
521**	E-4 Autopilot	X	X					X
523**	C-12 Compass System	X	X1	X1	X1	X1	X1	X1
56A**	Cockpit Voice/Flight Data Recorders	X	X	X	X	X	X	X
615**	HF Communications, AN/ ARC-190	X	X1	X1	X1		X1	X1
62A**	VHF Communications, AN/ ARC-186	X	X9	X1	X1	X1	X1	X1
63M**	UHF Communications, AN/ ARC-164	X	X9	X9	X9	X9	X9	X9
64***	Intercom System, AN/ AIC-18 and -25	X	X10	X10	X10	X10	X10	X10
65***	IFF, APX-64, and KIT-1C	X	X11	X11	X11	X11	X11	X 11
66***	Emergency Communication and Locator	X	X	X	X	X	X	X
663**	Underwater Acoustic Locator	X	X					X
692**	UHF/ADFs, AN/ARA-25 and -50	X	X1					
696**	SECURE VOICE, KY-58 and KY-75	X	X1	X1	X1		X1	X1
71C**	VOR/ILS/MB, AN/ ARN-147	X	X1	X1	X1	X1	X1	X1
71GAO	Integrated Control Display Unit	X	X	X	X	X12	X	X12
71GBO	Bus Integration Computer Unit	X	X	X	X	X	X	X
71GEO	Ring Laser Gyro/Inertial Navigation Unit	X	X	X	X	X	X	X
71Z**	TACAN, AN/ARN-118	X	X1	X1	X1	X1	X1	X1
7123*	Marker Beacon (Collins 51Z-4)	X						

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**SAR**	**NVG**	**AR**	**Ferry**	**AAD**	**OWM**
7193*	ADF	X						
721**	Doppler Velocity Sensor, AN/APN-121	X		X			X	
7223*	CARA, AN/APN-232	X	X13	X13			X13	X13
7232*	Radar Press System, AN/ APN-59	X	X	X	X	X	X	X
728**	Radar Press System, AN/ APN-59E (V)/-59F (V)	X	X	X	X	X14	X14	X
76A**	Flare/Chaff Dispenser, AN/ ALE-40	X		X12	X12		X12	
76B**	Radar Warning Receiver, AN/ALR-69	X		X12	X12		X12	
76E**	Infrared Warning AN/ AAR-44	X		X12	X12		X12	
77H**	Infrared Detection AN/ AAQ-17	X	X	X15	X15		X15	
91***	Emergency Equipment	X16	X	X	X	X	X	X16
97A**	Explosive Devices, Fire Ext Squib	X	X	X	X	X	X	X

Legend:

AAD Aerial Delivery
AR Air Refueling
Ferry Depot Ferry Flights
NVG Night Vision Goggles
OWM Overwater Mission
SAR Search and Rescue

NOTES:

1. One required.
2. Required if paratroop door drops are planned.
3. Temperature datum system "Auto" function may be inoperative, other than for engine start. Oil flap actuator may be inoperative provided actuator is fully open. Low speed ground idle function may be inoperative provided maintenance verifies problem exists in solenoid.
4. Gas turbine compressor not required provided destinations are equipped with ground air carts.
5. Pressurization not required. A/C not required when OAT is 50-85 degrees Fahrenheit.

6. Anti-ice/deicing system required for flying in icing conditions; minimum of one ice detector operative on either number 2 or number 3 engine.
7. One strobe, taxi, and landing light required. Formation lights required on NVG missions.
8. Fuel tank quantity indicators allowed to be inoperative: both auxiliary tanks, one external tank, and one main tank per wing (not symmetrical). One pylon tank boost pump in each external tank may be inoperative.
9. Number 1 position required.
10. Public address system may be inoperative. Required with passengers.
11. TS-1843 inline test set inoperative, system operation verification required by maintenance. Kit 1C required for ADIZ penetration on OWM.
12. Only required for electronic warfare (EW) training sortie/combat.
13. Pilot's indicator required.
14. Required if thunderstorms are forecasted or reported along route of flight.
15. Required for SOFI training.
16. Liferafts required.

Attachment 31 (Added)

MC-130H MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**PFT**	**LOL**	**IFR**	**ECM**	**Ferry**	**AAD**
11***	Windshield and Windows	X	X	X	X	X	X	X
1123*	Aft Cargo Ramp and Door	X	X	X	X	X	X	X
11299	Air Deflector Door	X				X		X1
1131*	Crew and Paratroop Doors	X	X	X	X	X	X	X1
1133*	Emergency Doors, Hatches, Exits	X	X	X	X	X	X	X
114**	Fuselage, Wings, Nacelles, Empennage	X	X	X	X	X	X	X
122**	Flight Deck	X	X	X	X	X	X	X
123**	Forward/Center/Aft Cargo	X	X	X	X	X	X	X
126**	Aerial Delivery System	X		X2				X
131**	Landing Gear System	X	X	X	X	X	X	X
141**	Flight Controls	X	X	X	X	X	X	X
22***	Turbo Prop Powerplant	X	X3	X3	X3	X3	X3	X3
24***	Auxiliary Power Unit	X	X	X	X	X	X	X
32***	Hydraulic Propeller	X	X	X	X	X	X	X
41***	Air-Conditioning and Pressurization System	X	X4	X4	X4	X4	X4	X4
414**	Bleed Air, Anti-Ice/Deice, Instruments, and Air-Conditioning System	X	X5	X5	X5	X5	X5	X5
4151*	Propeller Anti-Ice/Deicing	X	X	X	X	X	X	X
42***	Electrical Power Supply, AC	X	X	X	X	X	X	X
42***	Electrical Power Supply, DC	X	X	X	X	X	X	X
441**	External Lighting	X	X	X	X	X	X	X
442**	Internal Lighting	X	X6	X6	X6	X6	X6	X6
451**	Hydraulic System	X	X	X	X	X	X	X
461**	Fuel System	X	X7	X7	X7	X	X	X
46W**	Universal Air Refuel Receptacle Slipway Installation	X	X8	X8	X	X8	X8	X8
472**	Liquid/Gaseous Oxygen System	X	X	X	X	X	X	X
49A**	Toilet	X	X9	X9	X9	X9	X9	X9

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**PFT**	**LOL**	**IFR**	**ECM**	**Ferry**	**AAD**
491**	Fire/Overheat Detection and Extinguisher System	X	X	X	X	X	X	X
495**	Windshield Wiper	X	X	X	X	X	X	X
496**	Personnel Warning Bell	X	X	X	X	X	X	X
51***	Instruments, Flight and Navigation	X	X10	X10	X10	X10	X10	X10
523**	C-12 Compass System	X	X11	X11	X11	X11	X11	X11
526**	Flight Control System, FCS-105	X	X12	X12	X12	X12	X12	X12
615**	HF Communications, AN/ ARC-190	X		X			X13	
62B**	VHF Communications	X	X13	X13	X13	X13	X13	X13
63M**	UHF Communications, AN/ ARC-164 (V)	X	X	X	X	X	X	X
645**	Intercom System, AIC-30	X	X	X	X	X	X	X
65HA*	KIT-1A-T-Sec Comp	X						
65JA*	IFF, AN/APX-100	X	X	X	X	X	X	X
6617*	Emergency Locator Transmitter	X	X	X	X	X	X	X
663**	Underwater Acoustic Locator	X					X	
68E**	SATCOM, UHF Radio, AN/ ARC-187 (V) 16	X						
692**	UHF/VHF ADF, OA-8697A/ARD	X						
697**	SECURE VOICE, KY-75	X						
71AC*	ADF, DF-206A	X	X13	X13	X13	X13	X13	X13
71B**	VOR/Instrument Landing System, AN/ARN-127	X	X13	X13	X13	X13	X13	X13
71Z**	TACAN, AN/ARN-118	X	X13	X13	X13	X13	X13	X13
72BA*	Radar, Beacon Transponder AN/APX-78	X						
72V**	Radar, AN/APQ-170 (V)	X	X14	X	X14	X14	X14	X
72ZG*	Inertial Navigation System, SKN-244	X	X	X	X	X	X	X
7223*	CARA, AN/APN-232	X	X13	X	X13	X13	X13	X
7232*	Radar Pressurization System	X	X	X	X	X	X	X
7234*	Interface Blanker Unit, CN-1650	X		X15		X		
76A**	Flare/Chaff Dispenser, AN/ ALE-40	X		X16		X16		

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)					
			PFT	LOL	IFR	ECM	Ferry	AAD
76B**	Radar Warning Receiver, AN/ALR-69	X		X17		X		
76D**	Panoramic Receiver, AN/ APR-46A	X		X17		X		
76E**	Infrared Warning, AN/ AAR-44	X		X17		X		
76K**	Jammers, Fwd and Aft, AN/ ALQ-172 (V)	X		X17		X		
76YF*	Electronic Countermeasures, AN/QRC 84-02A	X		X17		X		
77F**	Infrared Detector System, AN/AAQ-15	X		X17				
82B**	Control Set, AN/ASQ-204	X	X	X	X	X	X	X
91***	Emergency Equipment	X	X	X	X	X	X	X

Legend:

AAD Aerial Delivery
ECM Aerial Intercepts; ECM Range
Ferry Depot Ferry Flights
IFR In-flight Refueling
LOL Low Level
PFT Proficiency Flying Time

NOTES:

1. Required if paratroop door drops are planned.
2. Aerial delivery system equipment is required if off-the-ramp drops are planned. Dual rail cargo system required for some airdrops.
3. Oil cooler augmentation not required. Temperature datum system "Auto" function may be inoperative, other than for engine start. Oil cooler flap actuator may be inoperative provided actuator is fully open. Low speed ground idle function may be inoperative provided maintenance verifies problem exists in solenoid.
4. Flight compartment air-conditioning may be required for avionics cooling depending on temperature and pressure altitude (refer to T.O. 1C-130 (M) H-1). Pressurization may be required for avionics cooling or to complete specific mission profiles. Both air-conditioning systems are required for avionics cooling (refer to T.O. IC-130 (M) H-1). Pressurization may be required for avionics cooling and to complete mission profiles.

5. Anti-ice/deicing system required for flying in icing conditions; minimum of one ice detector operative on either number 2 or number 3 engine.
6. Interior lighting as required for night vision goggle use and other operational requirements.
7. Local training flights may be conducted with two inoperative main tank indicators provided inoperative indicators are asymmetrical and not on same wing, and quantity is verified with a dipstick. One external fuel tank indicator may be inoperative provided both external tanks are checked full or empty. Both auxiliary tank indicators may be inoperative provided auxiliary fuel quantity is verified. *Exception:* For in-flight refueling (IFR) missions, all IFR components must be operational as well as fuel gauges for tanks that are to be refueled.
8. Required for IFR designated missions.
9. Flush type toilet or urinal required for missions of less than 6 hours. Flush type toilet required for flights longer than 6 hours.
10. Sextant is not required.
11. Number one C-12 compass is required.
12. May be required for planned extended crew-duty day in excess of 12 hours.
13. One system required.
14. Weather mode radar is required for flights into areas of known or forecasted thunderstorms.
15. Required when electronic countermeasures (ECM) use is planned.
16. Required when expendable use is planned. Applicable to certain ECM training and air intercept missions.
17. May be required depending on mission profile.

Attachment 32 (Added)

UH-1N MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**TT**	**NVG**	**SAR**	**CNV**	**IMC**	**REM**
11***	Airframe	X	X	X	X	X	X	X
11EA*	Fuselage Compartments	X	X	X	X	X	X	X
12A**	Cargo Hook	X						
13***	Landing Gear	X	X	X	X	X	X	X
14***	Flight Controls	X	X	X	X	X	X	X
15***	Rotor System	X	X	X	X	X	X	X
22***	Turboshaft Power Plant Assembly	X	X	X	X	X	X	X
26***	Rotary Wing Drive System	X	X	X	X	X	X	X
41***	Bleed Air Heater	X1	X1	X1	X1	X1	X1	X1
42***	Electrical Power Supply	X	X	X	X	X	X	X
441**	Internal Lighting System	X	X	X	X	X	X	X
442**	External Lighting System	X	X	X	X	X	X	X
45***	Hydraulic Power Supply System	X	X	X	X	X	X	X
46***	Fuel System	X	X	X	X	X	X	X
49***	Miscellaneous Utilities	X2	X2	X2	X2	X2	X2	X2
51***	Instruments	X	X	X	X	X	X	X
62***	VHF Communications (AM)	X	X	X	X	X	X	X
63***	UHF Communications	X	X	X	X	X	X	X
64***	Interphone	X	X	X	X	X	X	X
65***	IFF	X	X	X	X	X	X	X
7121*	TACAN	X		X	X		X	
7111*	UHF Direction Finder	X			X			
7151*	Marker Beacon	X			X		X	
72***	Radar Altimeter	X		X	X	X	X	
91***	Emergency Equipment	X	X	X	X	X	X	X

Legend:

CNV Conventional
IMC Instrument Meteorological Conditions
NVG Night Vision Goggles
REM Remote
SAR Search and Rescue
TT Tactical Training

NOTES:

1. Kirtland: As required seasonally or on flights of more than 1 hour duration at temperatures below 10 degrees Celsius.
2. Kirtland: Flotation collar required only on water hoist training flights.

Attachment 33 (Added)

HH-60G MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)						
WUC	**System/Subsystem**		**EP**	**IMC**	**XC**	**OWM**	**TTD**	**NVG**	**TTN**
11***	Airframe	X	X	X	X	X	X	X	X
12***	Cockpit/Fuselage Compartment	X	X	X	X	X	X	X	X
13***	Landing Gear System	X	X	X	X	X	X	X	X
14***	Flight Controls	X	X	X	X	X	X	X	X
15***	Rotor System	X	X	X	X	X	X	X	X
22***	Turboshaft Engines	X	X	X	X	X	X	X	X
24***	Auxiliary Power Plant	X	X	X	X	X	X	X	X
26***	Rotor Drive System	X	X	X	X	X	X	X	X
41***	Environmental Control System	X	X1	X1	X1	X1	X1	X1	X1
42***	Electrical Power Supply	X	X	X	X	X	X	X	X
4411*	Exterior Lights	X2	X2	X2	X2	X2	X2	X2	X2
4412*	Interior Lights	X		X3	X3			X3	X3
45***	Hydraulic Power System	X	X	X	X	X	X	X	X
455**	Auxiliary Power Unit System	X	X	X	X	X	X	X	X
4611*	Fuel System	X	X	X4	X4	X4	X4	X4	X4
49***	Fire Detect/Extinguisher System	X	X	X	X	X	X	X	X
4903*	Windshield Wiper System	X	X	X	X	X	X	X	X
4904*	Rescue Hoist System	X			X	X	X	X	X
491**	Cargo Hook System	X			X			X	X5
512**	Navigation Instruments	X		X	X	X	X	X	X
51A/B**	Flight/Engine Instruments	X	X	X	X	X	X	X	X
51C**	Voice Altitude Warning System	X				X		X	X
52***	AFCS System	X	X	X	X	X	X	X	X
561**	Vertical Gyro System	X	X	X	X	X	X	X	X
57A**	FLIR System AAQ-16	X							
61A**	AN/ARC-199	X			X	X	X	X	X
621**	VHF (FM) Radio AN/ARC-186	X			X	X	X	X	X
622**	VHF (AM) Radio AN/ARC-186	X	X	X	X	X	X	X	X

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)						
			EP	IMC	XC	OWM	TTD	NVG	TTN
631**	UHF (AM) Radio AN/ARC-164	X	X	X	X	X	X	X	X
64***	Intercom System	X	X	X	X	X	X	X	X
65***	IFF	X	X	X	X	X	X	X	X
66***	Radio Set/Personnel Locator	X			X	X	X	X	X
68***	Satellite Communications	X					X		X
69***	Secure Communications	X					X6		X6
711**	LF/ADF System AN/ARN-89	X							
7121*	VOR NAV AN/ARN-123	X		X				X	X
71A**	TACAN AN/ARN-118	X		X	X		X	X	X
71B**	UHF Directional Finder	X			X	X	X	X	X
71C**	Inertial Navigation System	X			X	X	X	X	X
71D**	Map Reader, KG-10-21	X							
71F**	Doppler, AN/ASN-137	X			X	X	X	X	X
71G**	Inertial Navigation Unit	X							
72***	Radar Altimeter	X							
72A**	Color Radar, APN-239	X			X	X			
751**	Armament, M60D	X					X		X
76***	Countermeasures	X					X		X
82***	Computer, Data Display	X							
91***	Emergency Equipment	X	X	X	X	X	X	X	X

Legend:

EP Emergency Procedures
IMC Instrument Meteorological Conditions
NVG Night Vision Goggles
OWM Overwater Mission
TTD Tactical Training, Day
TTN Tactical Training, Night
XC Off-Station Sortie

NOTES:

1. Heater required for flights over 1 hour duration when temperatures are below 10 degrees Celsius.
2. Must have one strobe light as a minimum.

3. Required for night off-station sorties.
4. Air refuel system is required.
5. Cargo hook cartridge is not required.
6. Operations maintain and supply digital data burst.

Attachment 34 (Added)

MH-53J/TH-53A MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	**Basic System List (BSL) (see legend below)**					
WUC (note 1)	**System/Subsystem**		**EP**	**IMC**	**XC**	**TTD**	**TTN**	**PAV** (note 2)
11**	Airframe	X	X	X	X	X	X	X
12***	Cockpit/Fuselage Compartment	X	X	X	X	X	X	X
12***	Plural Hemp Bar Assembly	X				X	X	X
13***	Landing Gear System	X3	X3	X3	X3	X3	X3	X3
14***	Flight/Fuselage Controls	X	X	X	X	X	X	X
15***	Rotor System	X4	X	X	X	X	X	X
22***	Turboshaft Engines	X5/6	X5	X5	X5/6	X5	X5	X5
24***	Auxiliary Power Unit	X	X	X	X	X	X	X
26***	Rotor Drive System	X7	X7	X7	X7	X7	X7	X7
41***	Environmental Control System	X8	X8	X8	X8	X8	X8	X8
42***	Electrical Power Supply	X	X	X	X	X	X	X
44***	Interior/Exterior Lights	X9	X9	X9	X9	X9	X9	X9
45***	Hydraulic/Pneudraulic System	X	X10	X10	X	X	X	X
46***	Fuel System	X11	X11	X11	X11	X11	X11	X11
46***	Air Refuel System	X			X	X	X	X
49***	Fire Detect/Extinguisher System	X	X	X	X	X	X	X
49***	Windshield Wiper System	X		X	X	X	X	X
49***	Cargo Hook System	X				X	X	
49***	Rescue Hoist System	X			X	X	X	X
51***	Instruments	X	X	X	X	X	X	X
51***	Cruise Guide System	X						
52***	Autopilot System	X12	X12	X12	X12	X12	X12	X12
52B**	Hover Coupler System	X2						X
52***	C-12 Compass System	X	X	X	X	X	X	X
57***	Integrated Guidance Systems	X					X2	X
61***	HF Radio AN/ARC-190	X			X	X	X	X
62***	VHF Radio	X	X	X	X	X	X	X
62B**	VHF Secure	X2					X2	
63***	UHF Radio	X	X	X	X	X	X	X
63B**	UHF Secure	X2					X2	
63C**	SATCOM Radio	X2/13						

WUC (note 1)	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below) EP	IMC	XC	TTD	TTN	PAV (note 2)
64***	Intercom System	X	X	X	X	X	X	X
65***	IFF	X	X14	X14	X14	X14	X14	X14
69***	Miscellaneous Communications	X2						
69C**	HF Secure (KYV-5)	X2						
71***	TACAN AN/ARN-118	X		X	X	X	X	X
71***	ILS/Marker Beacon	X		X	X	X	X	X
71***	VOR Localizer	X		X	X	X	X	X
71E**	PLS AN/ARS-6	X2						X15
71***	GPS System	X				X	X	X
72***	Radar Altimeter	X				X	X	X
72***	Doppler Navigation System	X				X	X	X
72C**	TF/TA Radar	X2						X
73A**	Projected Map Display	X2					X2	X
74A**	FLIR AN/APQ-18	X2					X2	X
75***	Weapons Delivery	X13				X13	X13	X13
76***	Countermeasures	X2/13				X2/13	X2/13	X2/13
77***	Photographic/Recon	X2/13				X2/13	X2/13	X2/13
91***	Emergency Equipment	X	X	X	X	X	X	X
97***	Explosive Items	X13	X13	X13	X13	X13	X13	X13

Legend:

EP Emergency Procedures
IMC Instrument Meteorological Conditions
PAV PAVELOW
TTD Tactical Training, Day
TTN Tactical Training, Night
XC Off-Station Sortie

NOTES:

1. Due to the differences in the subsystem WUCs between the MH-53J and TH-53A, only the first two digits of the subsystem WUCs will be used.
2. MH-53J only.
3. Landing gear may be inoperative if it can be pinned in the down position. Brakes are required for all flights. Tail skid may be pinned down if inoperative except for gun missions and live team training.

4. Blade/Pylon fold required for shipboard operations training.
5. Engine air particle separator blower must be operational with doors closed. Auxiliary oil tank not required for TH-53A. Beeper trim not required.
6. Auxiliary oil tanks required for extended range over water, MH-53J.
7. Rotor brakes must be operational for shipboard operations.
8. Heater system is required for flights over 1 hour in duration below 10 degrees Celsius. Anti-ice system is required for all flights except EP.
9. Exterior cargo loading, NLG down, main rotor head, tail position, land/hover blade tip lights, interior cargo loading and SX-5 lights not required. Flashing position lights only required for air refueling.
10. The cargo ramp may be inoperative as long as the cargo ramp can be secured in the "up" or "closed" position.
11. External/internal auxiliary fuel quantity indicators are not required. Internal Robertson fuel tank is considered an integral part of the TH-53A fuel system.
12. Required for initial takeoff and all flight crew duty days over 12 hours.
13. If installed.
14. IFF mode 3C and 4 required, mode 1 and 2 not required for local sorties.
15. Required for search and rescue missions, MH-53J only.

Attachment 35 (Added)

T-6 MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)									
WUC	**System/Subsystem**		**DCF**	**NCF**	**DIT**	**NIT**	**DFT**	**NFT**	**DLA**	**NLA**	**DHA**	**NHA**
11***	Airframe	X	X	X	X	X	X	X	X	X	X	X
11E**	Windshield and Canopy	X	X1	X1	X1	X1	X1	X1	X1	X1	X1	X1
12***	Cockpit	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
13***	Landing Gear	X	X	X	X	X	X	X	X	X	X	X
13E**	Brakes	X	X3	X3	X3	X3	X3	X3	X3	X3	X3	X3
14***	Flight Controls	X	X4	X4	X4	X4	X4	X4	X4	X4	X4	X4
22***	Power Plant	X	X5	X5	X5	X5	X5	X5	X5	X5	X5	X5
33***	Propeller	X	X	X	X	X	X	X	X	X	X	X
41***	Air-Conditioning and Pressurization	X	X6	X6	X6	X6	X6	X6	X6	X6	X6	X6
42***	Electrical Power	X	X	X	X	X	X	X	X	X	X	X
44AA*	Cockpit Lights	X		X2		X2		X2		X2		X2
44AAA	Warning Lights	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
44BA*	External Lighting	X	X7	X7	X7	X7	X7	X7	X7	X7	X7	X7
44BBB	Landing/Taxi Lights	X	X8	X8	X8	X8	X8	X8	X8	X8	X8	X8
45***	Hydraulic	X	X	X	X	X	X	X	X	X	X	X
46***	Fuel	X	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2
47***	Oxygen	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
49A**	Fire Detection System	X	X	X	X	X	X	X	X	X	X	X
51A**	Panels and Multipurpose Components (Flight Instruments)	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
51AD*	Stall Warning System (Angle of Attack)	X	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10
51BA*	Independent Instrumentation (Standby Instruments)	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
51BAD	Clock	X			X11	X11			X11	X11	X11	X11
51BAE	Accelerometer	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)									
			DCF	NCF	DIT	NIT	DFT	NFT	DLA	NLA	DHA	NHA
57AA*	Attitude/Heading Reference System (AHRS)	X	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12
57AB*	Electronic Flight Instrument System (EFIS)	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
57AC*	Integrated Automatic Tuning	X	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13
62A**	VHF Communication	X	X	X	X	X	X	X	X	X	X	X
63A**	UHF Communication	X	X14	X14	X14	X14	X14	X14	X14	X14	X14	X14
64A**	Interphone System	X	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15
65A**	Transponder	X	X16	X16	X16	X16	X16	X16	X16	X16	X16	X16
71A**	VHF Navigation	X	X17	X	X17	X	X17	X	X17	X	X17	X
71BA*	GPS	X		X18	X18	X18		X18	X18	X18	X18	X18
91***	Emergency Equipment	X	X	X	X	X	X	X	X	X	X	X
97***	Explosive Devices	X	X	X	X	X	X	X	X	X	X	X

Legend:

DCF Day Contact Familiarization

NCF Night Contact Familiarization

DIT Day Instrument

NIT Night Instrument

DFT Day Formation

NFT Night Formation

DLA Day Low-Altitude Navigation

NLA Night Low-Altitude Navigation

DHA Day High-Altitude Navigation

NHA Night High-Altitude Navigation

NOTES:

1. Aircraft with canopy or windscreen distorted/crazed within T.O. limits are restricted to day dual local visual meteorological conditions (VMC) and no formation flights (Rated pilot decision).
2. Aircraft may be flown solo with discrepancies in rear cockpit that do not affect safety of flight.
3. Restricted to dual day local, dual local instrument meteorological conditions (IMC), or solo with a rated pilot for first flight when brake system has been bled due to component removal, replacement, or installation (JPPT only).
4. Trim aid device not a required subsystem. Failure does not impact flight safety.
5. Aircraft with engines that require special oil analysis surveillance and or sampling are restricted to local missions. Restricted to ferry flight, in manual mode, by rated pilot.
6. Air-conditioning manual mode required if auto mode is inoperative.
7. Wing and taillights not required for day flights. However, if a day flight takeoff extends into a night flight, lights will be operational before takeoff.
8. Either landing or taxi light must be operational, restricted to day local VMC (dual or solo). Continued flight with one bulb inoperative allowable.
9. Restricted to rated pilot if fuel auto balance system is inoperative. Single point refueling not required.
10. Restricted to flight by rated pilot.
11. One clock must be operational in each cockpit.
12. For a standby magnetic compass swing required by maintenance, the aircraft is restricted to dual day local VMC or solo with a rated pilot.
13. Fault Code and side channel discrepancies allowable if it does not affect system operation.
14. May be inoperative if the VHF communication system is operational. Required for student solo.
15. Ground crew amplifier not required.
16. Restricted to day local VMC for home field pattern only missions with local air traffic control approval.
17. Restricted to day local VMC.
18. May be inoperative if not needed for syllabus training.

Attachment 36 (Added)

T-38C MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**CNT**	**FOR**	**LOL**	**NT**	**AAC**	**ASC**
11***	Airframe	X	X	X	X	X	X	X
11***	Windshield/Canopy	X	X1	X1	X1	X1	X1	X1
121**	Cockpit and Controls	X	X1	X1	X1	X1	X1	X1
13***	Landing Gear and Brakes	X	X	X	X	X	X	X
14***	Flight Controls	X	X	X	X	X	X	X
23***	Turbojet Power Plant/Gearboxes	X	X2	X2	X2	X2	X2	X2
23KDU	Electronic Engine Display	X	X3	X3	X3	X3	X3	X3
41***	Air-Conditioning, Pressurization, and Anti-Ice Control	X	X1	X1	X1	X1	X1	X1
42***	Electrical System	X	X	X	X	X	X	X
4411*	Exterior Lights	X	X4	X4	X4	X4	X4	X4
442**	Interior Lights	X	X1/5	X1/5		X1/5		
45***	Hydraulic and Pneumatic Power	X	X1	X1	X1	X1	X1	X1
46***	Fuel System	X	X	X	X	X	X	X
47***	Oxygen System	X	X1	X1	X1	X1	X1	X1
49***	Miscellaneous Utilities (Fire Detection)	X	X	X	X	X	X	X
51***	Standby Instruments	X6	X1	X1	X1	X1	X1	X1
5112*	Air Data Computer/TAT Probe	X	X	X	X	X	X	X
51241	Mission and Data Processor	X	X	X	X	X	X	X
51243	Head-Up Display	X	X3	X3	X3	X3	X3	X3
51247	Up-Front Control Panel	X	X1	X1	X1	X1	X1	X1
51248	Multifunction Display	X	X1	X1	X1	X1	X1	X1
513**	Angle of Attack (AOA)	X7	X3	X3	X3	X3	X3	X3
55A**	Camera System	X					X	X
55C**	Data Transfer System	X	X3	X3	X3	X3	X3	X3
62A**	VHF Radio System	X	X8	X8	X8	X8	X8	X8
63D**	UHF Radio System	X	X8	X8	X8	X8	X8	X8
64C**	Audio Intercom System	X	X1	X1	X1	X1	X1	X1
65D**	TCAS II System	X	X9	X9	X9	X9	X9	X9
65E**	Mode S Transponder	X	X10	X10	X10	X10	X10	X10
71E**	EGI	X	X	X	X	X	X	X
71E**	Radar Altimeter	X11			X3			X3
71E**	Stability Augmentation System	X		X	X3/9		X3/9	X3/9
71F**	VOR/ILS/DME Radio Navigation	X	X	X	X	X	X	X

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)					
			CNT	FOR	LOL	NT	AAC	ASC
91***	Emergency/Personnel Equipment	X	X1	X1	X1	X1	X1	X1
97***	Egress System	X	X1	X1	X1	X1	X1	X1

Legend:

CNT Contact Sorties, including advanced handling characteristics
FOR Formation Sorties
LOL Low-Level Navigation Sorties
NT Instrument, Navigation, Transition, and Cross-Country Training
AAC Air-to-Air, Conventional
ASC Air-to-Surface, Conventional

NOTES:

1. Restricted to solo only with rear cockpit discrepancies that do not affect safety of flight, including rear canopy visual distortion, discoloration, or crazing within technical order limits (rated pilot decision) and inoperative intercom. Air-conditioning in manual mode required.
2. Restricted to local and rated pilot for first flight when an engine is replaced with a non-FCF engine (SUPT only). Aircraft with engines requiring special oil analysis surveillance and/or sampling are restricted to local missions.
3. Not required for cross-country returns.
4. As required by AFI 11-202, Volume 3, MAJCOM supplements, and local operating procedures.
5. Required for night sorties.
6. Restricted to dual day local VMC or solo with a rated pilot for compass swing due.
7. AOA indexer not required for aircraft during FCF or being input to/returning from program depot maintenance or contract field team repair facilities.
8. VHF or UHF required for cross-country returns.
9. As required by AFIs, MAJCOM supplements, and local operating procedures.
10. Restricted to day local pattern only missions with local air traffic control approval.
11. Radar altimeter will not work if baggage pod is attached.

Attachment 37 (Added)

IC 2001-1

IC 2001-1 TO AFI 21-103/AETC SUP 1, *EQUIPMENT INVENTORY, STATUS, AND UTILIZATION REPORTING*

30 NOVEMBER 2001

SUMMARY OF REVISIONS

This revision incorporates interim change (IC) 2001-1 which adds **Attachment 35 (Added)**, T-6 Mission Essential Subsystem List (MESL), and **Attachment 36 (Added)**, T-38C Mission Essential Subsystem List (MESL). See the last attachment of this publication (IC 2001-1) for the complete IC. A H indicates revision from the previous edition.

2.25.8. (Added) Minimum Essential Subsystems Lists (MESL) for AETC-assigned aircraft are specified in **Attachment 19 (Added)** through **Attachment 36 (Added)**. Operating restrictions specified in AETCI 21-101, Maintenance Management of Aerospace Equipment, and aircraft technical orders take precedence when determining acceptability for flight. Minimum requirements for a functional check flight (FCF) are determined by the profile required and the FCF pilot. One-time flight procedures are specified in 00-20-series technical orders.

9.20. (Added) Forms Adopted. DD Forms 1149 and 1348-1a; AF Forms 126, 1297, 2426, 2691, and 2692; AFTO Form 92; and AETC Form 138.

Attachment 35 (Added)

T-6 MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)									
WUC	**System/Subsystem**		**DCF**	**NCF**	**DIT**	**NIT**	**DFT**	**NFT**	**DLA**	**NLA**	**DHA**	**NHA**
11***	Airframe	X	X	X	X	X	X	X	X	X	X	X
11E**	Windshield and Canopy	X	X1	X1	X1	X1	X1	X1	X1	X1	X1	X1
12***	Cockpit	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
13***	Landing Gear	X	X	X	X	X	X	X	X	X	X	X
13E**	Brakes	X	X3	X3	X3	X3	X3	X3	X3	X3	X3	X3
14***	Flight Controls	X	X4	X4	X4	X4	X4	X4	X4	X4	X4	X4
22***	Power Plant	X	X5	X5	X5	X5	X5	X5	X5	X5	X5	X5
33***	Propeller	X	X	X	X	X	X	X	X	X	X	X
41***	Air-Conditioning and Pressurization	X	X6	X6	X6	X6	X6	X6	X6	X6	X6	X6
42***	Electrical Power	X	X	X	X	X	X	X	X	X	X	X
44AA*	Cockpit Lights	X		X2		X2		X2		X2		X2
44AAA	Warning Lights	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
44BA*	External Lighting	X	X7	X7	X7	X7	X7	X7	X7	X7	X7	X7
44BBB	Landing/Taxi Lights	X	X8	X8	X8	X8	X8	X8	X8	X8	X8	X8
45***	Hydraulic	X	X	X	X	X	X	X	X	X	X	X
46***	Fuel	X	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2	X9/2
47***	Oxygen	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
49A**	Fire Detection System	X	X	X	X	X	X	X	X	X	X	X
51A**	Panels and Multipurpose Components (Flight Instruments)	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
51AD*	Stall Warning System (Angle of Attack)	X	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10	X2/10
51BA*	Independent Instrumentation (Standby Instruments)	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
51BAD	Clock	X			X11	X11			X11	X11	X11	X11
51BAE	Accelerometer	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
57AA*	Attitude/Heading Reference System (AHRS)	X	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12	X2/12
57AB*	Electronic Flight Instrument System (EFIS)	X	X2	X2	X2	X2	X2	X2	X2	X2	X2	X2
57AC*	Integrated Automatic Tuning	X	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13	X2/13
62A**	VHF Communication	X	X	X	X	X	X	X	X	X	X	X
63A**	UHF Communication	X	X14	X14	X14	X14	X14	X14	X14	X14	X14	X14
64A**	Interphone System	X	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15	X2/15
65A**	Transponder	X	X16	X16	X16	X16	X16	X16	X16	X16	X16	X16

WUC	System/Subsystem	Full System List (FSL)	Basic System List (BSL) (see legend below)									
			DCF	NCF	DIT	NIT	DFT	NFT	DLA	NLA	DHA	NHA
71A**	VHF Navigation	X	X17	X	X17	X	X17	X	X17	X	X17	X
71BA*	GPS	X		X18	X18	X18		X18	X18	X18	X18	X18
91***	Emergency Equipment	X	X	X	X	X	X	X	X	X	X	X
97***	Explosive Devices	X	X	X	X	X	X	X	X	X	X	X

Legend:

DCF Day Contact Familiarization
NCF Night Contact Familiarization
DIT Day Instrument
NIT Night Instrument
DFT Day Formation
NFT Night Formation
DLA Day Low-Altitude Navigation
NLA Night Low-Altitude Navigation
DHA Day High-Altitude Navigation
NHA Night High-Altitude Navigation

NOTES:

1. Aircraft with canopy or windscreen distorted/crazed within T.O. limits are restricted to day dual local visual meteorological conditions (VMC) and no formation flights (Rated pilot decision).
2. Aircraft may be flown solo with discrepancies in rear cockpit that do not affect safety of flight.
3. Restricted to dual day local, dual local instrument meteorological conditions (IMC), or solo with a rated pilot for first flight when brake system has been bled due to component removal, replacement, or installation (JPPT only).
4. Trim aid device not a required subsystem. Failure does not impact flight safety.
5. Aircraft with engines that require special oil analysis surveillance and or sampling are restricted to local missions. Restricted to ferry flight, in manual mode, by rated pilot.
6. Air-conditioning manual mode required if auto mode is inoperative.
7. Wing and taillights not required for day flights. However, if a day flight takeoff extends into a night flight, lights will be operational before takeoff.
8. Either landing or taxi light must be operational, restricted to day local VMC (dual or solo). Continued flight with one bulb inoperative allowable.
9. Restricted to rated pilot if fuel auto balance system is inoperative. Single point refueling not required.
10. Restricted to flight by rated pilot.
11. One clock must be operational in each cockpit.

12. For a standby magnetic compass swing required by maintenance, the aircraft is restricted to dual day local VMC or solo with a rated pilot.
13. Fault Code and side channel discrepancies allowable if it does not affect system operation.
14. May be inoperative if the VHF communication system is operational. Required for student solo.
15. Ground crew amplifier not required.
16. Restricted to day local VMC for home field pattern only missions with local air traffic control approval.
17. Restricted to day local VMC.
18. May be inoperative if not needed for syllabus training.

Attachment 36 (Added)

T-38C MISSION ESSENTIAL SUBSYSTEM LIST (MESL)

NOTE: Numbers in columns refer to notes below.

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**CNT**	**FOR**	**LOL**	**NT**	**AAC**	**ASC**
11***	Airframe	X	X	X	X	X	X	X
11***	Windshield/Canopy	X	X1	X1	X1	X1	X1	X1
121**	Cockpit and Controls	X	X1	X1	X1	X1	X1	X1
13***	Landing Gear and Brakes	X	X	X	X	X	X	X
14***	Flight Controls	X	X	X	X	X	X	X
23***	Turbojet Power Plant/Gearboxes	X	X2	X2	X2	X2	X2	X2
23KDU	Electronic Engine Display	X	X3	X3	X3	X3	X3	X3
41***	Air-Conditioning, Pressurization, and Anti-Ice Control	X	X1	X1	X1	X1	X1	X1
42***	Electrical System	X	X	X	X	X	X	X
4411*	Exterior Lights	X	X4	X4	X4	X4	X4	X4
442**	Interior Lights	X	X1/5	X1/5		X1/5		
45***	Hydraulic and Pneumatic Power	X	X1	X1	X1	X1	X1	X1
46***	Fuel System	X	X	X	X	X	X	X
47***	Oxygen System	X	X1	X1	X1	X1	X1	X1
49***	Miscellaneous Utilities (Fire Detection)	X	X	X	X	X	X	X
51***	Standby Instruments	X6	X1	X1	X1	X1	X1	X1
5112*	Air Data Computer/TAT Probe	X	X	X	X	X	X	X
51241	Mission and Data Processor	X	X	X	X	X	X	X
51243	Head-Up Display	X	X3	X3	X3	X3	X3	X3
51247	Up-Front Control Panel	X	X1	X1	X1	X1	X1	X1
51248	Multifunction Display	X	X1	X1	X1	X1	X1	X1
513**	Angle of Attack (AOA)	X7	X3	X3	X3	X3	X3	X3
55A**	Camera System	X					X	X
55C**	Data Transfer System	X	X3	X3	X3	X3	X3	X3
62A**	VHF Radio System	X	X8	X8	X8	X8	X8	X8
63D**	UHF Radio System	X	X8	X8	X8	X8	X8	X8
64C**	Audio Intercom System	X	X1	X1	X1	X1	X1	X1
65D**	TCAS II System	X	X9	X9	X9	X9	X9	X9
65E**	Mode S Transponder	X	X10	X10	X10	X10	X10	X10
71E**	EGI	X	X	X	X	X	X	X
71E**	Radar Altimeter	X11			X3			X3
71E**	Stability Augmentation System	X		X	X3/9		X3/9	X3/9
71F**	VOR/ILS/DME Radio Navigation	X	X	X	X	X	X	X

		Full System List (FSL)	Basic System List (BSL) (see legend below)					
WUC	**System/Subsystem**		**CNT**	**FOR**	**LOL**	**NT**	**AAC**	**ASC**
91***	Emergency/Personnel Equipment	X	X1	X1	X1	X1	X1	X1
97***	Egress System	X	X1	X1	X1	X1	X1	X1

Legend:

CNT Contact Sorties, including advanced handling characteristics
FOR Formation Sorties
LOL Low-Level Navigation Sorties
NT Instrument, Navigation, Transition, and Cross-Country Training
AAC Air-to-Air, Conventional
ASC Air-to-Surface, Conventional

NOTES:

1. Restricted to solo only with rear cockpit discrepancies that do not affect safety of flight, including rear canopy visual distortion, discoloration, or crazing within technical order limits (rated pilot decision) and inoperative intercom. Air-conditioning in manual mode required.
2. Restricted to local and rated pilot for first flight when an engine is replaced with a non-FCF engine (SUPT only). Aircraft with engines requiring special oil analysis surveillance and/or sampling are restricted to local missions.
3. Not required for cross-country returns.
4. As required by AFI 11-202, Volume 3, MAJCOM supplements, and local operating procedures.
5. Required for night sorties.
6. Restricted to dual day local VMC or solo with a rated pilot for compass swing due.
7. AOA indexer not required for aircraft during FCF or being input to/returning from program depot maintenance or contract field team repair facilities.
8. VHF or UHF required for cross-country returns.
9. As required by AFIs, MAJCOM supplements, and local operating procedures.
10. Restricted to day local pattern only missions with local air traffic control approval.
11. Radar altimeter will not work if baggage pod is attached.

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